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Description of the Antiquities at Kálinjar.—By Lieut. F. MAISEY,
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VERNOR, N. W. P.

In a Report on the 'Antiquities of Kálinjar' which I last year had the pleasure to forward to the Hon'ble the Lieutenant Governor, N. W. P., I mentioned my inability to enter into minute details, owing to my absence from the spot, and the want of notes at the time of drawing up the Report. I hope now to supply any past deficiencies, as the present paper has been entirely drawn up at Kálinjar itself.

I have already described the general situation and aspect of the Fort and I affix a rough plan of the same, in order to point out more clearly the sites of the various places mentioned. (Pl. VI. fig. 1.)

The Hill of Kálinjar, called also Rabichitr, from रबि, the Sun, was, beyond a doubt, devoted to Hindu worship long before the erection of the Fort, for not only are the dates of inscriptions at the caves, and on the various sculptures earlier than those on the gates of the Fort, but in many places the rampart walls are in a great measure built with fragments of ornamental pillars, cornices, &c. which probably at the erection of the Fort were the remains of Hindu fanes of remote antiquity.(1) These relics of forgotten buildings are seen in many situations which entirely preclude the idea of their having been so placed in

(1) This use of the fragments of buildings in the formation of the ramparts renders it difficult to assign the proper dates to them and the gateways. It will be seen that in several gates there is a variety of date and names.

mere repairs of the wall; moreover, it is very probable that the Fort was not built until the disturbance of the Hindu dynasties consequent on the Mahomedan invasion, when amid the constant wars and feuds, such an impregnable site would of course offer many advantages.(2) A date of the erection of the Fort is given in note 40; mention is made in "Dow" of a king of Kálinjar as early as A. D. 978, or Samvat 1035, but the earliest mention of a Fort is in the year 593 of the Higerá, or A. D. 1205, Samvat 1262. As there are several objects of interest in the ascent it will perhaps be better to commence at the lowest gate and particularize each in succession.

The only ascent now(3) is on the northern face of the hill; it is defended by a loopholed wall and seven gateways, which, in accordance with the sacred character of the place, have been supposed typical of the seven planetary mansions through which the soul has to pass before its absorption into Brahm.(4) In Colonel Pogson's work on the Bundelas, an analogy is inferred between the seven gates of Kálinjar and the ladders erected in the caves devoted to the Mithratic rites, which ladders had seven portals, one above the other, either metallised or coloured to represent Saturn, Venus, Jupiter, Mercury, Mars, the

(2) The hill, which is between 700 and 800 feet high, is isolated, with the exception of a small offshoot at the eastern extremity, called Kálinjari (from whence the walls were battered by our artillery in 1804). The crest of the hill is perpendicular rock for an average of 50 feet, principally a natural precipice, but in some parts increased by scarping. The walls occupy the whole crest of the hill and in some parts the terrepleine of the rampart actually overhangs the precipice, as in Pl. IX. fig. 6. Wherever a shoulder or spur of the Hill might afford a lodgment to an assailant, a lower rampart or Fausse Braie is carried round, and encloses it, as seen at *R. a. u.* Pl. VI. fig. 1.

(3) There is another approach to the S. E. called the Pannáh or Bansákas gate (*q. v.*) but it is now blocked up.

(4) It is supposed that the Hindu worship had its origin in that of the Sun, which seems to have been almost universally adored as the emblem of the Creator; to which the moon was joined, in order to meet the human ideas of generative power. These celestial bodies were impersonated and other planets added as objects of worship. The common origin of the Hindu, Egyptian, Greek, Roman, Anglo-Saxon, &c. idolatry is at once apparent in the identity of the deities worshipped by different nations on the 7 days of the week, to which they give these names:—

Sol, Luna, Mars, Mercury, Jupiter, Venus and Saturn are the Suryá, Somá, Mangala, Budh, Vrihaspati, Sukrá and Shani or Sanichar of the Hindus, and the Sun, Moon, Tuisco Woden or Odin, Thor, Freya or Friga and Scater of our own ancestors. The Hindus make some of them of a different gender from the classical, but they appear to worship some both as male and female, as the ancient Egyptians did the moon, &c.



Fig 2



Moon and the Sun in successive order. But of course this is no place for long extracts, or volumes might be filled with accounts of the curious coincidences in the buildings and forms of worship of widely separated nations. In Pogson's small work there are several highly interesting extracts and notes on these subjects which will amply repay perusal. In reading a life of Inigo Jones, I was struck with the similarity between the seven-walled and seven-gated erections of the Hindus and others, and Stonehenge. According to his description, having been directed by king James to give his opinion of Stonehenge, he set to work digging, measuring and planning and subjecting it to the principles of architecture, and published an elaborate account of the whole.(5) The comparison of these various peculiarities is most curious and interesting; but I have already too long deferred the actual account of realities in the pursuit of theories.

The first gate is situated about 200 feet above the base of the hill, which is so far undefended. The gateway is of a modern appearance, and was probably entirely rebuilt at the date of the inscription, which is over it. It is defended by a loopholed bastion on each side, and a loopholed wall runs up the side of the hill at this and the other gates to prevent a passage round them. It is called the *Álam Darwáza*, from its founder, Aurangzeb, who took the name of *Álamgír*. The Persian inscription over it is given below.(6) It fixes the date at 1084 of

(5) According to his account, Stonehenge was a "Temple of the Tuscan order, raised by the Romans some time between Agricola and Constantine, and consecrated to the God *Cælus*, the origin of all things, because of the situation, the decorum of the structure, the pyramidal figures of the stones, and the nature of the sacrifices." From his careful investigations he was able to state that the building was composed of polygons within a circle consisting of three ranges of stones (the outer one circular and the two inner hexagonal) surrounding the principal edifice. There were three approaches with double gates at each range of stones, and the ground from the outer circle rising gradually to the centre on which stood the shrine, as it were.

This may be supposed to have been a temple of the sun and the six gates in each approach gradually rising over each other the moon and five lesser deities.

الله هو الغني

(6) شاه اورنگ زیب دین پرور شد مرمیت چون قلع کالنجر
چون محمد مراد از حکمش ساخت درها محکم و خوشتر
از خرد سال چشمش میگفت مد عظیم چو مد اسکندر

۱۰۶۴۹۷۱۴

the Higerā. The numbers being shown under the letters म३५६८०० according to their numerical value. There are strong wooden doors to this gateway. The ascent between the 1st and 2d gateways (called the Kafir Ghātī) is chiefly by steps (7) and very steep.

The second gateway is called by the brāhmins "Ganēsh Darwāza;" it has no doors standing, but the sockets for the hinges and cross-bars in this and other gateways prove that originally there were doors to all. (8) There are no inscriptions on this gateway, immediately beyond which is the 3d, or "Chandi Darwāza," at the angle of the hill. This in fact is a double gate, but the whole forms one building and goes by one name. This gate is also defended by the loop-holed wall and bastion.

There are several inscriptions on the sides of this gateway, one given in facsimile* (No. 6) and the others below. (9) The inscription in facsimile is on a block of stone, which evidently has once formed part of some decorated building, for it is carved with foliage, &c., and quite out of keeping with the plain style of the gateway. Beyond this gateway is a modern looking building, seemingly a mere shelter for the defenders; from this point the covered way is nearly level as far as the next gateway, before reaching which you observe a mass of rock on the right, which has apparently fallen from above; on this there is what appears to be a rough Ling and also a Sānskrit inscription of 5 lines, containing the name of several pandits. The cavalier or barbette which commands the approach to the 4th gate, conceals a gateway which opens on a rough flight of steps leading by a short cut to the foot of the hill. (10) The 4th or Budh Bndr gate, is of very solid construc-

(7) The entire ascent was evidently originally formed into steps, the traces of which are evident throughout, and in most parts they are still very perfect.

(8) On the right of this gate as you approach it there is a small coarse sculpture in relief, representing a seated Ganesh, about 18 inches high, from which probably the gate is named.

(9) Inscriptions at the 3rd or Chandi gate:—

(10) This gateway is reached by a path which winds round the barbette; it has no doors,

महेशकह प्रणमु मनुवीजक सं १५७२

वसुदेव कह प्रणामगोपाल देवकनीत्यप्रति सं १६००

महेशकह प्रणमुजवानंदकजगिरथफदिन प्रति संवत् ११८८

महेशकह प्रणामु गणेशकह दिवदरेक दिन संवत् १५८०

* See Appendix.—Eds.

tion; it has only one inscription, which corresponds with that of Manu on the Chandi gate.(11) The 5th gate is called Hanumán Darwáza, and round it the wall of the covered way makes a sweep, forming a kind of "Place of Arms," in which is situated Hanumán Kund, a small pool of water enclosed by four walls, and reached by steps on one side. The wall next the hill is formed into two rows of three arches, the lower row almost covered by the water. A small barbette on the left as you come abreast of the gate supports a dismantled 6-pounder iron gun, of the same construction as those which will be shortly noticed. At the extremity of the place of arms a small postern in the wall leads on to a narrow irregular path running along the precipitous side of the hill to some dried up Kunds,(12) which however are mere hollows in the rock and not worth the trouble of visiting. The face of the rock between Hanumán Kund and the gateway, is covered with sculpture, but it is so defaced and obliterated as to be almost unintelligible. The subjects, as far as I could see, consist of figures of Mahádeo, Ganesh, Devi, the Bull Nandi(13), Ling, and figures of worshippers. The gate is in a very ruinous condition; it has one or two inscriptions.(14) The steps

but the sockets remain as in the 2d gate; stores, &c. are said to have been formerly brought by this path for the use of the garrison. The bráhmans call it the Balkandí Mahádeo Darwáza, from the image of that name which is found in the descent on which it opens. This image (the Balkandí Mahádeo) is situated about half way in the descent. There is a small building with a pyramidal roof formed of diagonal layers of stone. It gives cover to an image of Mahádeo as the Ling, 6 feet high. The building and image are given in plan and sec. in figs. 8, 9, 10, 11, plate 2. [A facsimile of this plate is deposited in the Society's Library.—Eds.] A banian tree has grown in the most curious manner apparently through the building, and its roots are interlaced in the door as seen in fig. 9, the path of the descent runs round and partly above the mass of rock on which the dewala abuts over and on each side of the doorway there are several, small unimportant sculptures of Ganesha, Mahádeo, Párbatí, &c. and some other figures and Ling are seen on slabs of rock near, but they are not worth sketching.

(11) Inscriptions at 4th gate :—

महेशकह प्रणमनूवीजक सं १५८०

(12) There are no sculptures or inscriptions at any of these places; on the right of the path leading to them is a small figure in the rock representing a "Sarmán" or water-carrier.

(13) Nandi, the váhan or vehicle of Mahádeo, on which he rides, hence his name of Nandigan.

(14) On the left (ascending) महेशकह प्रणम सोखमनूकविरोनि यनिजौफनिते श्रीते संवत् १५३० on the right is an inscription with the name of Ganesh, dated १५८०.

of the ascent as seen in the plan, make a sharp turn at this gate, resuming the same direction beyond it. Passing through it you see a figure of Hanumán on a slab resting against the rock; it is very badly executed; he is represented in the act of striking with a club and holding a flower or fruit. One foot is on the prostrate figure of a demon: on the left of this figure is a small recess under a projection of the rock, containing five figures in relief, almost undistinguishable from whitewash.(15) The face of the rock between the Hanumán and 6th or Lál Darwáza, is lined with sculpture much obliterated, owing to its exposed situation;(16) about half way between the two gates is another small recess called a Siddh ke guphá. There is a small door to it, on the left of which is a representation of Narsingha.(17) Inside the recess there is nothing but a fragment of a figure of Hanumán about 9 inches high. The 6th or Lál Darwáza, is in very good preservation, and has the wooden doors standing; on the right is the inscription given below,(18) and on the left one dated संवत् १५८९.

Ascending to the top of this gateway you reach a pathway which leads along the face of the hill (J G) to the fausse braie, which contains Bhairon Kund.(19) This is an artificial tank about 45 yards long; one side is formed by the rock, which is excavated roughly for a little distance, five square pillars and 4 or 5 pilasters being left as support. They are very coarse and unfinished; I do not think there is any sculpture on them, or in the recess, but I cannot be sure, as there were no means of reaching the spot. The water appears to be shallow, and is reached by steps on the side of the tank. About 20 feet above the water there is a figure of Bhairon about 10 feet high, cut in the

(15) There is the dried up bed of a Kund here, which was originally called Hanumán Kund.

(16) The sculptures represent Káli, Chandika, Ling and Joni, &c. but there is nothing curious or uncommon among them; there are several small inscriptions dated संवत् १५६० and १६०० containing the names of Manu and other workmen, probably the artists of the sculptures.

(17) Vishnu is here represented riding on a lion, which is rearing over the kneeling figure of Hiranakasipa.

(18) महेश्वर प्रणम्य सनुबोजक संवत् १५८०.

(19) This may be reached also by ascending to the top of the Budh Badr gate, and scrambling over the rough slope formed by the broken wall.

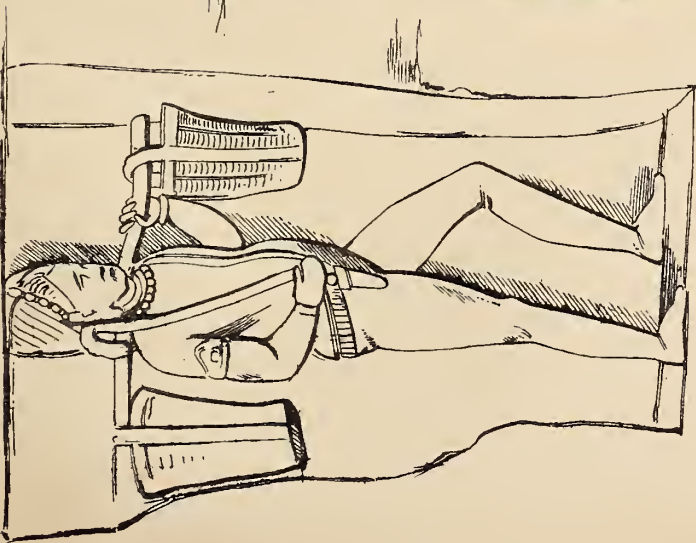


Fig 3

lt. Marsey delt.



Fig 4.

solid rock. He is represented in the usual manner and attitude. (20) On the rock to the right of the tank are several Ling emblems of Mahádeo of various sizes, and on the left some male and female dancing figures and two sarmán or water-carriers, (vide Pl. VII. fig. 3.) near one of which is the inscription No. 12.* (21) Lying near Bhairon Kund is a stone trough or cistern 4 feet 9 inches long and 2 feet 5 inches wide, cut out of a solid piece.

From the Lál Darwáza a short ascent leads to the 7th or main gate, which is of a comparatively modern appearance and has probably been repaired at a later date than the others. There is an inscription on it dated Samvat 1691 or 2; it has large wooden doors. Inside the gate on the left are several detached sculptures of Mahádeo and Párbati, Ling and Joni, impressions of feet, &c. (22)

As the various caves, kunds, &c. &c. are scattered about in different parts of the hill, it will perhaps save confusion if I mention them in the order in which they present themselves as you make the circuit of the ramparts, commencing on the left of the main gate.

The first objects which attract attention are two large iron guns lying on stone barbettes. There are fourteen of these guns in different

(20) The figure does not appear very well finished, and is moreover nearly hidden by the jungle which has been suffered to grow over it.

(21) The situation of this inscription prevented my making a facsimile of it, as I was obliged to cling to the rock with one hand while copying with the other, whereas to make a facsimile I must have used both hands. I believe the copy is correct of as much as was legible at all.

(22) The Joni, which is the name of the curious spouted pedestal on which the Ling stands, is the emblem of Párbatí, the female power of nature, as the Ling Mahádeo is of the male. Mr. Coleman says, "Of the origin of the mystic worship of the Linga and the Joni little appears to be understood. It may be presumed to have been nature, under the male and female forms personified as Siva, the Sun (which he is equally with Surya) or fire, the genial heat which pervades, generates and vivifies all: and Bhávaní, who is the goddess of nature, is also the earth, the universal mother. These two active principles of life having been thus personified, may have been subsequently converted, by the grossness of idolatry, which in its progress invariably seeks rather to gratify the sensual appetites than to instruct the minds of its votaries, from imaginary forms to realities, from the personified symbols of nature to typical representations of the procreating power of these symbols themselves. The Joni is the symbol of female energy, worshipped by the sect of the Sáktas and in conjunction with the Linga by the Saivas; it is the especial emblem of Párbatí. In representation of the Linga it forms the rim or ridge of Argha which encircles it."—Coleman, *Myth.* pp. 175, 176.

* See Appendix.

parts of the fort, consisting of 18, 12, 9, and 6 pounders. They are of very heavy metal and seem to be formed of iron bars confined by hoops of the same metal very firmly welded together; most of them have a roughly carved design. They appear to have been mounted on pivots and swivels so as to embrace a large space in their range. The trunnions are placed much as in our guns, and each of the stone barbettes has a socket in the centre, probably for the reception of the pivot on which the gun worked.

The gun nearest the gate has the following inscription :

दलमरदनश्रीमहाराजधोराजश्रीमहाराजश्रीराजहोरदेसहोजुदेव

“Dalmardan Srí Maháráj Dhíráj Srí Maháráj Srí Ráj Hiradesa Hí-judeo.”(23) The Rájá Hiradesa here mentioned, was, I believe, the son of the famous Chatarsal. A path leads past these guns down to the rampart, the terrepleine of which is lower than the gateway. There is a flight of steps for the purpose of ascending and descending, but it is choked up by jungle; at a little distance from the gateway there is a fall in the level of the rampart of about 12 feet, and this is the site of the cave called “Sitá-sej” or (Sitá’s bed) which is excavated under the upper, and opens on to the lower portion of the rampart. The plan and sections of this cave are shown in (MS.) Plate I.(24) It is entirely hewn in the solid rock, the marks of the chisel being apparent throughout; the side opposite the entrance is occupied by a stone couch and pillow on which Sitá, the wife of Rámchaudra, is supposed to have slept; the roof is of very curious formation, being cut into vaulted shelves or cupboards on each side of the centre, vide fig. 3 P. P. These shelves occupy about half of the roof, O. R. fig. 2, and the remainder O. S. is plain.(25) The door, J, has plain pilasters on each side, and square holes, f f, above and below, seemingly for posts to bar up the entrance. There are several inscriptions on the stone bed, two of which are shown in facsimile;(26) they are chiefly of

(23) There are inscriptions on two other guns which will be shortly mentioned; they each contain the name of Rája Hiradesa, preceded by several expressions of respect, and the name of the gun.

(24) The bráhmans say that after the war in Lanka (Ceylon) consequent in the abduction of Sitá by Rávan, she, Sitá, came to Kálinjar and made this abode for herself. It is called also Rám Syan.

(25) These shelves are said to have been made as receptacles for the various articles of clothing and ornaments pertaining to Sitá, and there are also two niches in the sides of the cave for holding lamps.

(26) Nos. 7 and 10. See Appendix.

1600, and thereabout, but on the left of the cave (outside) near a small Ling in relief is a date of ३ १५००. On the right of the cave as you face it, there is a small recess under a projection of the rock, on which are some poorly executed male and female figures; close to Sitá-sej is Sitákund, which is I think a natural reservoir, or at all events very little enlarged. It is a pool of clear water on a small cavity under shelving rocks, and is reached by two or three steps from the rampart. On the rock over the kund is a sitting figure about 2 feet high resting on one hand, and near it what seems to be a fish in a basket.(27) The water of this kund is much prized for bathing.

Beyond this point the rampart for a few yards is broken, and you ascend the hill a little in order to past round the gap, immediately on the other side of which is the mouth of the curious descent to Pátál Gangá.(28) This a large cavern full of water, about 40 feet by 20 or 25; it is situated between 40 and 50 feet below the top of the hill, and the only access to it is by winding steps cut in the solid rock leading from the rampart almost perpendicularly down to the water, like a well in fact. The cave is rough and irregular, and probably in great measure natural, but the descent has evidently been carried through the rock, as the marks of the chisel pervade it throughout.(29) The entrance to the descent is under a large mass of rock which abuts on the rampart and the steps wind down very abruptly. They are very irregular, some being three feet and others not one foot high. About half way down there are two gaps on the left, through which a view is obtained of the bottom of the hill and the distant plain.(30) In the steps and

(27) Vide Pl. VII. fig. 4. The bráhmans call this a Chaukidár. Over the right shoulder of this figure is an illegible inscription, and over the basket some more much obliterated characters with the date १६४०.

(28) I fancy this name merely refers to the dark and subterraneous nature of the place. There is an account of Gangá having once descended into Pátál to rescue the 60,000 sons of King Sagara, but I do not see any affinity to that beyond in the place in question.

(29) It seems probable that this descent was formed down the course of some natural cleft or fissure, which was enlarged or built up as required; the position of the cave containing the water could not otherwise have been ascertained, as there are no traces of it visible from the outside below.

(30) The winding descent has been here excavated so near the face of the hill that apparently the mere screen left has given way and formed this gate. A rough wall of stones has been built close in the passage at the lowest gap, and the whole has evidently at

rock overhead here and for some distance down there are square holes, evidently for the insertion of stone or wooden pillars to aid in supporting the weight of rock ; on the right of the descent, as you reach these apertures, is a date of 1540, and opposite to them is a small door 3 feet 7 inches by 3 feet, showing a shallow recess or niche, which probably originally contained an image. This door is guarded by a coarsely executed male figure in alto-relievo, standing on a couple of stools and resting on a staff. He is attended by a cow, apparently standing over a small Ling and Joni ;(31) under the figure is an inscription, dated ١٥٤٠, which is given in facsimile No. 8, and on the right door post, another dated ١٥٤٠, (obl.) also in facsimile No. 9.(32) About 30 steps below this point there is another aperture in the screen of rock left by the excavation ; it is very small, being only just large enough to admit the passage of the body.(33)

From this opening a descent of 11 or 12 steps leads to the level of the water, which is about three feet from the roof. In order to see the nature of the cavern, I had chirághs lighted and floated to the further end ; the roof of the cave is rough, as is also as much of the bottom as is visible from the steps. The bráhmans would not wade far into it, as they said it is very deep in the centre. I have already stated that the cave is about 40 feet by 20 or 25 ; the roof is entirely unsupported, which makes me think that it is a natural cavity, very little if at all enlarged by art, for it is not probable that any workman would have left nearly 1000 square feet of rock unsupported by pillars. The water appears to be constantly dripping and trickling from the roof and sides.

one time been built up in this manner, as the traces of cement are visible all round the openings, so that the places originally must have been well worthy of its gloomy name.

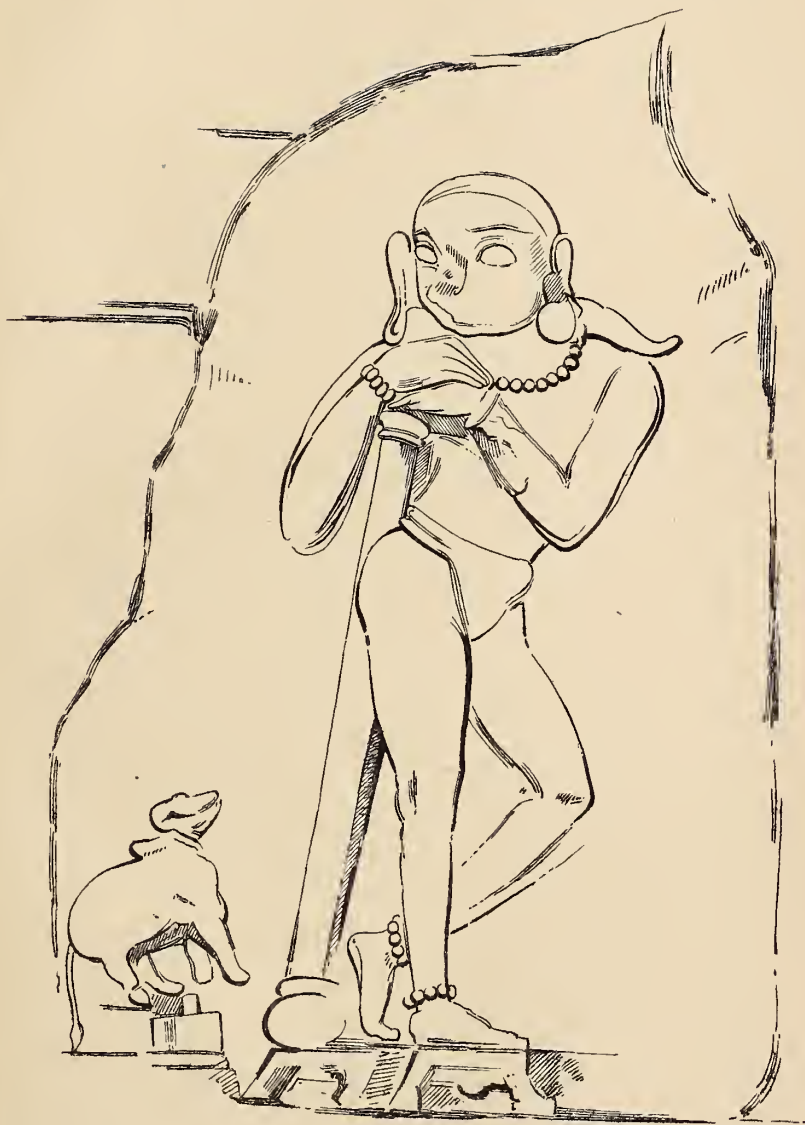
(31) Vide Pl. VIII.

(32) The surface of the stone on which these are cut being very rough and worn, it was impossible to make a good facsimile.

(33) About 10 feet below this opening the face of the hill loses its perpendicular direction and slopes down abruptly ; there is an overgrown path along the foot of the precipice into which I let myself down, in order to ascertain whether there were any traces of the cave from the outside ; however I could discover none. On the rock here are several Persian inscriptions, one containing the name of Humáyun and date of Hígera 936, which exactly corresponds with the date of the siege of Kálinjar by Humáyun given in Dow.

محمد همايون پادشاه غازي بتاريخ سلخ رجب المرجب سنه ٩٣٦

Mahammud Humáyun Pádsháh Ghází bataríkh salkh Rajab-ul-Murajab, Samvat 936.



(34) There is a glimmering light from the left which comes through crevices between the horizontal strata of the rock, which are not traceable from the outside. Proceeding along the rampart beyond Pátál Gangá, you see some rough steps on the left leading through and outside the wall on to a ledge of rock in which is situated Pándu Kund. The rampart here rests on a projecting rock, and the Kund, which is under it, is approached by a dark passage between the virgin rock and a wall built up to close in the passage, as seen in Pl. IX. fig. 6. There is no sculpture in this passage; the only objects in it being a small outline of a sarmán scratched in the rock, and a similar one of Bhagwán, near which is the inscription(35) shown below; above this there are traces of another inscription, and to the left the characters fig. 1, Pl. X. The kund is a shallow circular basin about 12 feet in diameter; the water is constantly trickling into it from between flat strata of rock and running over finds its way down the hill. There are six small Ling five inches high sculptured in the rock close to it; over the Kund is the inscription(36), and beyond it two others, one given in facsimile(11) and the other below(37). On the rock at the end of the space containing the kund are some curious characters(38). About 40 yards beyond the entrance to Pándu Kund is a flight of 3 or 4 steps leading into a low vault under the rampart, probably formerly used as a Magazine for powder, &c.

The next feature is a large breach at the N. E. angle, which was formed by our troops under Col. Martindell. In the broken walls may be seen a number of fragments of pillars, cornices, &c. The breach has been partially repaired, and the rampart wall is here 50 feet high. There are several pieces of sculpture and architectural decorations built up into the interior slope of the rampart here under some trees. They have all the appearance of having formed portions of

(34) The hill may be compared to a huge sponge, for you meet with kunds either full or dry, and water is seen oozing and dropping from it in hundreds of places; however, the structure of the hill is loose strata, and of course the water from the numerous tanks above percolates all over it and finds the nearest vents.

(35) मनेसुववले करप्रलमारा

(36) गोकर्नमरथीन प्रवरकप पौषावन

(37) नरहरोमरधीन प्रणम पखवनके

(38) We have given these in Pl. X. with their Roman equivalents as pencilled on the MS. by Capt. A. Cunningham, — Eds.

square pillars or pedestals(39). Some of the subjects are indecent and others represent various deities, dancing girls, &c.

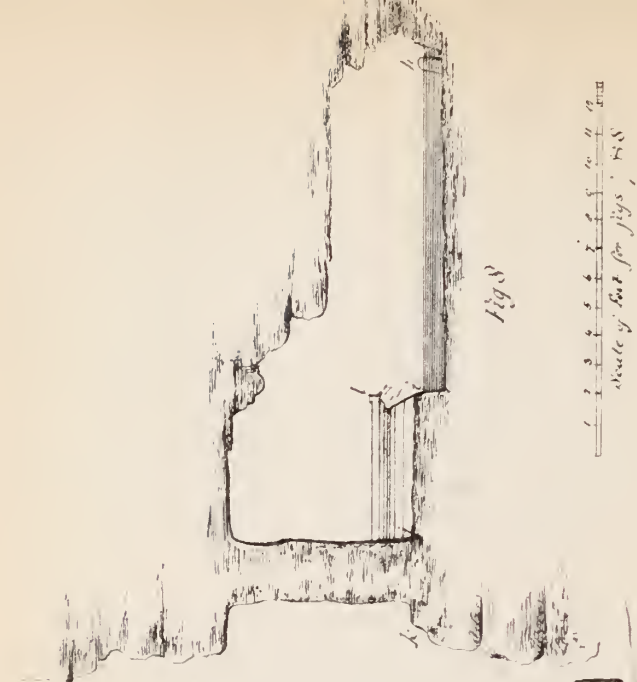
Proceeding along the side *II I* you shortly arrive at a considerable drop in the level of the rampart caused by a hollow of the hill. The ground to your right here is high and dotted with several buildings. There are among them some tombs, and Ling chabutras, but the greater part are small plain dewalas, empty, with the exception of one, which contains two wretchedly executed sitting naked figures of Mahádeo and Párbatí. These buildings are scattered about the banks of a tank called the Buddhi, Buddhá, or Burhiyá ke Taláo. This tank is about 50 yards by 25, and is excavated in the rock; it has steps all round it; bathing in it is said to be very beneficial to soul and body. This tank and the fort are said to have been constructed at the same period.(40)

A little beyond the hollow ground the rampart has given way and the fragments form a precarious descent to the slope of the hill below, along which is a tangled path, now seldom visited owing to the trouble of reaching it. This path conducts to a Siddh ke guphá, Bhagwán-sej and Pání ke Áman; the Siddh ke guphá is merely a small excavation in the perpendicular rock formed for performing penance in; there is a plan and section of it in (MS.) Pl. II. figs. 1 and 2; * in it I found the two pieces of stone containing the inscription given in facsimile No. 3.

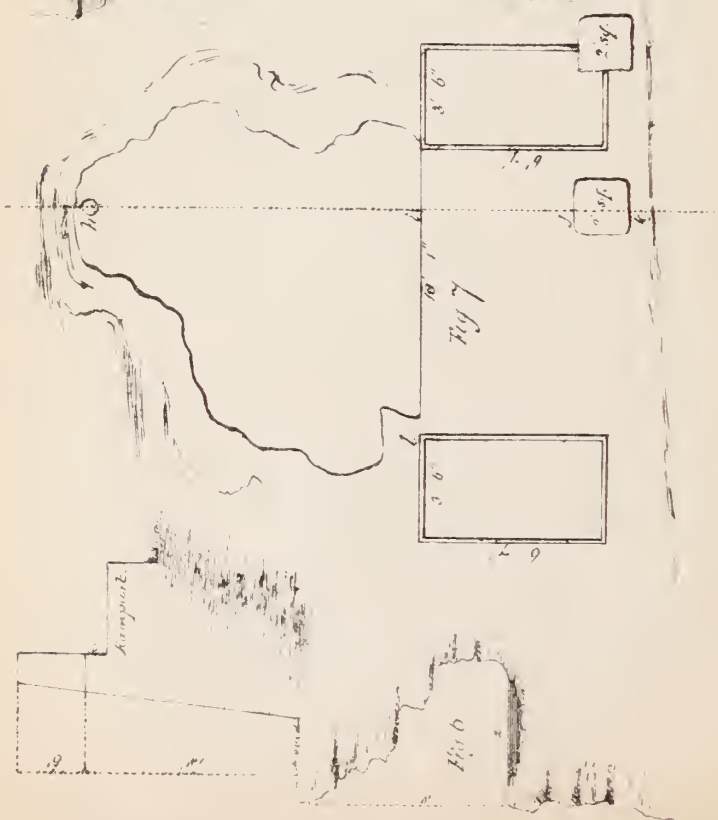
(39) A little beyond this point the bráhmans show you a spot at the foot of the rampart where there was formerly a large temple, to which probably these fragments pertained. There are still traces of building visible, but it is impossible to guess at their nature or extent in consequence of the height from which you view them.—(Pl. VI. fig. 1. p.)

(40) According to the tradition of the bráhmans there was originally only a small spring here, the water of which possessed great virtues. It chanced that a rájá Kirat Brihm, surnamed Krim Khot, a leper, happened to visit Kálinjar, and hearing of the spring, bathed in it and was cured; in gratitude for which he made the tank and built the Fort. The name of Krim Khot was probably only allusive to the disease; Sanserít कृमि a worm, and खोद a blemish, or खूटी a scab.—But Kirat Brihm is a real name of one of the latter Chandál Rájás, the immediate predecessor of Parmál Brihm, whose name is mentioned on the large inscription at Nílkánth dated 1209 of the Samvat; so that according to this account the date of the erection of the fort would be near the end of the twelfth century of the Samvat, making it a good deal upwards of 700 years old.

* The publication of all Lieut. Maisey's beautiful plans would involve so heavy an outlay that we have been compelled to omit several. These we have had traced on thin paper and deposited in the Society's Library. The references to these in Lieut. M.'s paper we have distinguished by the letters (MS.)—EDS.



scale of feet for figs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100



Bhagwán-sej is a stone couch and pillow similar to that in Sitá-sej, but smaller and cut under a projection of the rock, as shown in plan and section, figs. 3 and 4, (MS.) Plate II. Beyond this is the excavation called Páni ke Aman; it is very low and entered by a small door about 2 feet 6 inches high; the flat roof is supported by 3 or 4 pillars slightly decorated. The cave, or rather hole, is very small, and so low that you are forced to creep on hands and knees to examine it. There is no sculpture at these places. Re-ascending to the rampart and continuing the circuit of the fort you next reach the Pannáh or Bansakar gate, situated at an angle of the hill, which is guarded by a fausse braie. There are three gateways, one in the rampart (Pl. VI. v.), a second at the extremity of the fausse braie, and the third a little lower down; the two latter are blocked up. There are several inscriptions on the right of the rampart gateway, three of which I have shown below. (41) Passing round to the left of the gateway and proceeding to the end of the enclosure, you find a choked up flight of steps opening on the terrepleine of the rampart and leading to a gateway or postern, which formerly gave access to several places of worship, but it is now blocked up, (42) and to reach them you must descend the wall of the fausse braie by means of trees growing near it. The path at the foot of the wall runs in a scrambling up and down direction to the right and left; pursuing the path leading towards the breach, and passing a small pool of water, called Bhairon ke Jhitya, you shortly reach a partially excavated kund under projecting masses of rock, which are supported by pillars (*vide* Pl. IX. fig. 7). On each side of the kund is a stone slab or bench. The only sculpture here is a figure in relief of a sarmán, and a small Ling at the extremity of the kund. (43) The bráhmans call this both Mahádeo and Bhairon kund. Sculptured in the rock, about 20 feet above this kund is a large naked figure of

(41) Inscriptions on the right of Pannáh gateway :

बसुदेव कह प्रणमु गजगरदनकगेपुत्रफनानूपती संवत् १६००

महेशकह प्रणमु कवलतनकनौत प्रति संवत् १६००

• on the right gate post :

महेश कह प्रणमु मोखमनुवीति अयोजौकनिल सं १५५०

(42) The path to the Siddh ke guphá, Bhagwán-sej, &c. already mentioned, was formerly through this postern.

(43) Over the Kund is the date संवत् ११८५ and on the right hand slab १६००.

Bhairon, to reach which you have to climb over steep and slippery masses of rock. The situation of the sculpture is curious ; it is sculptured in relief on the perpendicular rock with a small ledge about 2 feet wide immediately below it, which is the only standing room near it.(44) This figure is called the Minduke or Mirke Bhairon. He has ten arms, two supporting the rock and holding up some drapery stretched out like a curtain, probably the veil with which at the end of the world, he will hide the sun, thereby causing universal destruction. (45) His various hands hold respectively, a sword, a thunderbolt, (46) a head, (47) shield, trisul (trident), axe, club, ladu ; (48) an elephant is sculptured behind him, and he is attended also by his váhan or vehicle, a dog. He has a skull in his head-dress and a garland of them round him ; under the figure is the date 1432, १४३२ but under a small figure of a worshipper on the right, which appears part and parcel of the subject, is the date 1194 (Samvat) ११९५. The Bhairon must be 8 or 9 feet high. On the left are three standing figures with Ling and Joni between them. They consist of a male between two females ; the male figure holds two, and each female figure one, string of beads. On the right is a seated female figure (49) rather larger than life ; one hand is on her bosom, and she supports herself on the other. Her eyes are turned towards Bhairon ; she is seated on a kind of *chárpái*, on which is an inscription with Manu's name, date १५६३. (50) There are also a figure of a sarmán, and a head of Mahádeo.

(44) On this account I am unable to give a drawing of it : however, it resembles in most respects the various other figures of Bhairon.

(45) One of the figures of Siva in the Elephanta cave is so represented.

(46) Hence Bhairon's name of Bajranga.

(47) The origin of the head represented in the hand of the destructive form of Siva is thus explained by Col. Vans Kennedy : during a quarrel between Siva and Brahma, the former in a rage cut off with his nail one of the 5 heads of the latter, who had originally 5, and was unable to loose it from his hand ; hence he is represented with one in his destructive capacity.

(48) Most of the figures of Bhairon at Kálinjar are attended by an Elephant, which he feeds with Ladu.

(49) Káli, who with Siva, is the progenitor of Bhairon.

(50) Between the years 1550 and 1600 of the Samvat, there seem to have been extensive works carried on at Kálinjar. Manu Bijay seems to have been the principal architect and sculptor (vide notes 9, 11, 14, 16, 18 ;) probably at that date the Fort was thoroughly repaired as well as enriched with sculpture.



Fig. 1

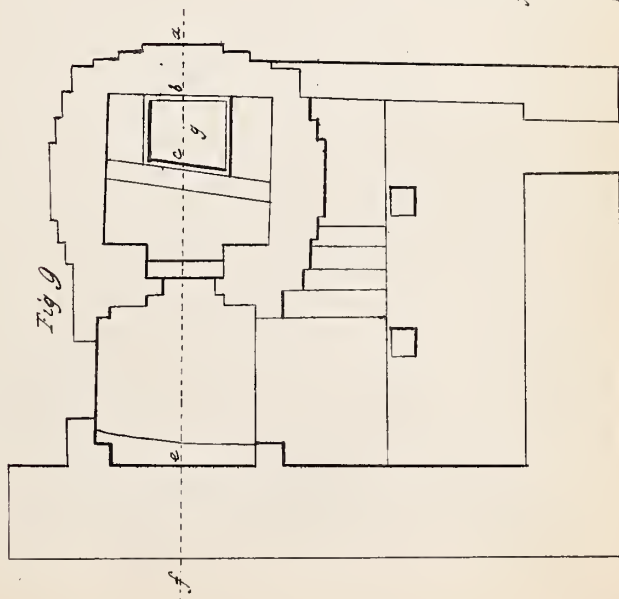


Fig. 9

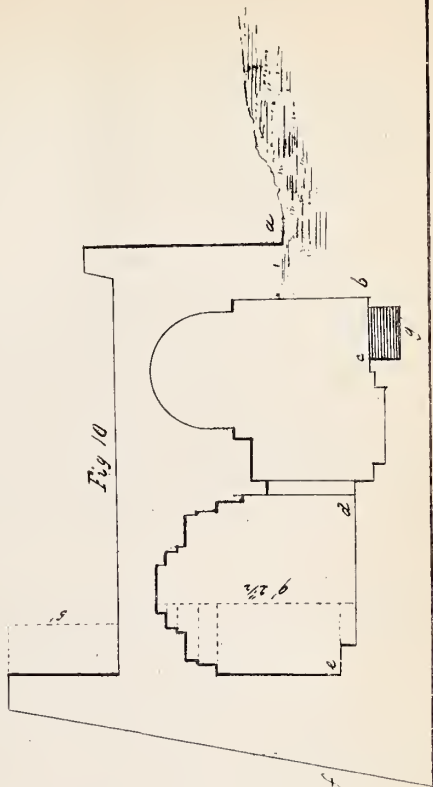


Fig. 10

Following the path at the foot of the *fausse braie* in the other direction, you reach, after a great deal of scrambling, three small shelving excavations, called Fakir's cave;(51) they are very shallow and so sloping that sitting in them even for a few minutes must have been a considerable penance.

The next object of interest after leaving the Pannáh gate is the *Mrig Dhárá*. There are here two contiguous chambers with domed and pyramidal roofs respectively; they are built across the terrepleine of the rampart, and are terraced over at top, forming in fact a kind of casemated barbette (vide plan and section Pl. X. figs. 9, 10). In the inner chamber, *B. D.* is a small cistern or basin (*g*) full of clear delicious water, which is constantly trickling down from a hole in the side of the chamber; I imagine this water must perecolate from the *Kot Tírt*h, a large tank on the high ground above.(52)

(51) These are not caves but merely small natural hollows slightly enlarged by manual labour. They adjoin each other, being only separated by a thin screen of rock, which, between the two furthest is cut through. There is no trace of sculpture here, and nothing, but the following characters in the middle cavity ननेसित्या उद.

(52) *Kot Tírt*h, from Sanscrit कोट ^a Fort, and तीर्थ a place of pilgrimage (especially water.) This is a large tank nearly 100 yards long, artificially formed in the rocky surface of the hill; there are several flight of steps leading down to the water in different places. They have apparently been at one time profusely decorated with sculptures, some of which now remain. In the wall of the tank at the N. E. corner is a reclining figure of Vishnu Náráyana. On the pathway S. E. angle of the tank is a Ling with 4 faces about 2 feet 8 inches high (vide Pl. XI. fig. 11.) There are several buildings scattered round this tank, mostly modern, and a small dewála at the S. W. corner, where there are some tawdry images and several curious forms of the Ling and Joni (vide Pl. XIII.) this end of the tank is formed by a wall, or rather blocked up bridge, which cuts off a small irregularly excavated portion generally dry; probably this was only done to give symmetry to the tank; the *Kot Tírt*h is also said to be supplied by springs, and the bráhmans aver that in the S. E. corner is a large deep Báoli, whose mouth is hidden

the water. As I had no means of getting at the spot in order to plumb the bottom, I cannot answer for the truth of this statement. Besides this fine tank and the *Burhiyá taláo* already mentioned, there are several others on top of the hill. The *Madár taláo*, the *Ramna* near the lines, and the *Sanichari*, probably named from *Sanichar* or *Shani*, the planet Saturn; these three are excavated in the rock, but are neither so large nor so carefully formed as the two before mentioned. Besides these there are two ponds nearly dry except in the rains, one to the N. E. of the bráhma's hut, is called *Taleya* or *Tilegani*, and the other on the parade, is called the *Bijli Taláo*, almost at the foot of the hill there is another tank called the *Sursu Gangá*, which seems to collect the water which finds its way from above. This is a considerable sized artificial tank with steps all round

On the right of the cistern is a small basso-relievo of seven deer, from which the name is derived, ऋग, a deer, and घारा a stream or current. The origin of this name was explained to me by the bráhmans, as follows: "In the Sat Yuga there were seven sages, (सप्त ऋषि) who offended their guru or religious instructor, and were cursed by him. In consequence of his curse they were transformed into hogs, and doomed to wander in Ujeinban or the jungles of Ujein, during the term of their lives, after which they became deer, and are so to remain during the four Yugas, and to subsist only on the food which pious worshippers set apart for them, when performing the ceremony of "pinda parna." The bráhmans repeat several couplets referring to this curious legend, which is a proof of the planetary worship shadowed forth in the Hindu Mythology. The "sapt rikh or risli," are the 7 stars in "Charles' wain" according to Shakespear. Mr. Coleman's account differs; he says, "The rishis were the offspring of the Bráhmádicás, who were the sons of Brahma. They are seven in number, and are named Kasyapa, Atri, Vasishta, Viswamitra, Gautama, Jamadagni, and Bharadwája. They are astronomically the husbands of the 6 Pleiades. How six and seven can accord, may be difficult to understand: mythologically they were seven sages, who obtained beatitude by their virtue and piety." The dates at Mrigdhára are chiefly of 1600.

About 100 yards beyond this a postern leads through a bastion on to a terrace or fausse braie, which extends some distance in either direction. There are two dried up kunds here, reached by steps, but no sculpture or inscriptions. They are called Kunbhoo (quære, from Kumbh?). From hence to the Níl Kánth gateway, there is nothing to be seen except two or three guns (53) of the same description as that already mentioned; one of them at z has the following inscription:—
मनपसरश्रीमहाराजधीरज श्रीमहाराज श्रीरजधिरदेसहिजुदेव कारीगरनंदेसन ।

it, originally profusely decorated with sculpture, much of which still remains, and fragments are visible in the water, at two of the corners are huge figures of Náráyana similar to the one in my sketch of last year, but having the 10 avatár, the Kurma avatár and various praying figures represented above and below. These figures are on slabs 10 feet 6 inches long. There are a number of Lings here.

(53) At ———* there is an empty building called Singhásila; it is a mere pile of stones, and I fancy from its commanding position it must have served as a look out.

* Blank in MS. Eds.

“Manpasar Srí Maháráj dhíráj Srí Maháráj Srí ráj Híradesa Híjudev, Karigar Nandesan.” Close to the gateway leading to Níl Kanth is a smaller gun with the following inscription : घुरधानो श्रीमहाराजधोरज श्रीमहाराजधोरजहरदे rest obliterated(54) ; Dhuradhaní, Srí Maháráj dhíráj Srí Maháráj Srí ráj Hirade. Beyond the Níl Kanth gateway, (55) the interior slope of the rampart is studded with fragments of sculpture and architectural mouldings, all the way to E, where there was formerly a chandel building called “Parmál ke baith ke,” to which most of these debris probably pertained ; hardly any traces of the building now remain, as its destruction was completed some years ago to furnish materials for a tomb to Mr. Wauchope, who died at Kálinjar ;(56) at this point the rampart becomes suddenly sunk and runs at that lower level as far as F whence it is again raised as far as the main gate (j). Between E and F is the Madár taláo, which is a dark dismal looking artificial tank, something like Bhairon Kund, (i) but smaller ; on the bank there is a small empty domed building, with a low vault beneath, also empty ; there are no sculptures or inscriptions here and the place has a deserted appearance. Near F are the traces of another building, also attributed to Parmál, but no guess can be made at its nature, as it merely consists now of a confused heap of stones more or less chiselled and ornamented.(57)

The remaining curiosities in the fort are two images of the Baráh avatár, in which Vishnu is represented in the hog shape. One of them is on the path leading from the main-gate to Níl Kanth, and close to the latter place, it is formed of a fine grained bluish stone and highly finished. On the back of the animal is the Panch-mukhi, or Panchánan Ling ;(58) the legs are broken off. The extreme length of the

(54) There are traces of other letters below this, but it is impossible to make them out. It was with great difficulty that I could decipher the inscriptions, as the letters are very badly shaped and merely scratched on the gun metal and filled with brass or some other substance.

(55) See in the sequel a supplementary account of Nílkanth in which I have included much new matter, and endeavoured to correct any deficiencies in my last year's Report.

(56) So say the bráhmans.

(57) Between this point and the main gate there is nothing to be seen ; there are a few fragments built into the wall here and there, but they are of no interest.

(58) So say the bráhmans, though the Ling is the emblem of, and Panchmukhi and Panchánan, names of Siva. There are several pieces of sculpture scattered along the pathway, representing Devi Mahadeo, alone and with Párbatí, &c.

sculpture is 5 feet and the thickness across the shoulder 1 foot 8 inches : it is shown in Plate XII. The other hog is under some trees a short distance S. E. of the Kot Tirth ; it is 7 feet 7 inches long and 2 feet 7 inches across the shoulder.(59)

Kálinjar having been originally sacred to Kálí, and being now devoted to Siva, of course the effigies of both are very numerous, especially the Ling and Joni form of Mahádeo and Párbatí (vide note 22). In figs. 19, 20, 21, Pl. XIII. several curious forms are shown ;(60) among them some which show a great affinity to the architectural column, which I am inclined to think is deduced from the Ling both being emblems of man. Among the classics the column base and capital complete, was always considered to represent the human figure.

Description of the Caves and Temple of Nílkanth, and the descent to them.

I have already stated that you pass through two gateways in the descent to the fausse braie, which contains the temple of Nílkanth. The upper gateway (in the main rampart, or enceinte) is said to have been built by Parmál Brimh, the last of the Chandel Rajáhs,(61) who flourished in the early part of the 13th century of the Samvat. This is probably true, for the style of the structure corresponds with that of the buildings, called generally Chandel.(62) On either side of the gateway there are inscriptions in praise of various deities, and containing pilgrims' names. One bears the name of some baboo and date संत् १५४०, others are of १५४७ and १५७५, and one is shown in

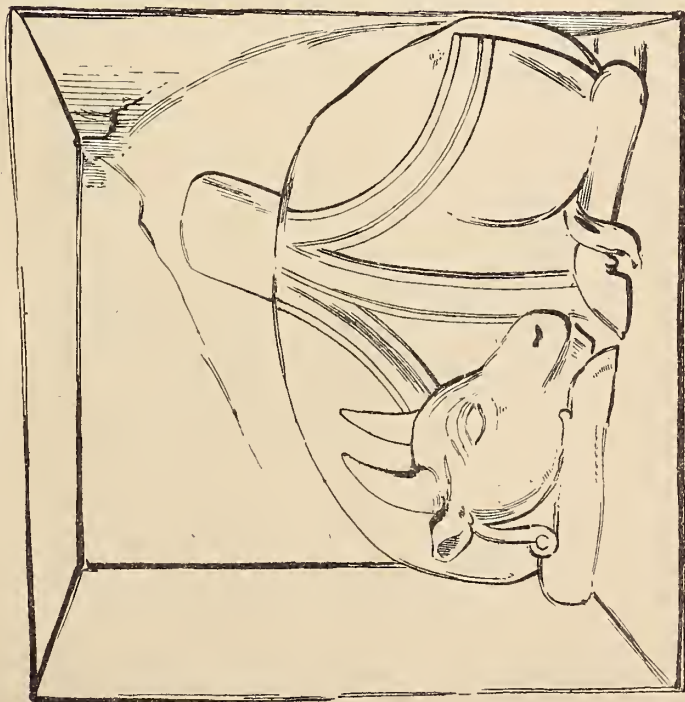
(59) It is cut out of a block of the soft stone which composes the hill and consequently is in very bad preservation. Vide Pl. XI. fig. 13.

(60) See note 86 for a curious type of the Joni.

(61) According to a list given to me by Captain Ellis, assistant to Col. Sleeman, and which he had copied from a work of a native poet, Parmál Brimh, was the last of a line of 22 rájás, called the Chandel Rájás of Mahaba, who were fabled to be descended from Chandramá, (the moon) and Hemoti, a bráhman woman, hence the title Brimh.

(62) The pillars and decorations in the Temple or Rás nandal below, are precisely of the description, and the probability is that they also were erected by Parmál, or at all events by his predecessor Kirat Brimh, (Krim Khot, the founder of the fort) note 40. The bráhmans scout this idea with horror and declare that the temple and cave were the work of Viswakarmá, the celestial architect, in the Sat Yug.

Fig 14



Line Maisey del.

Fig 11.

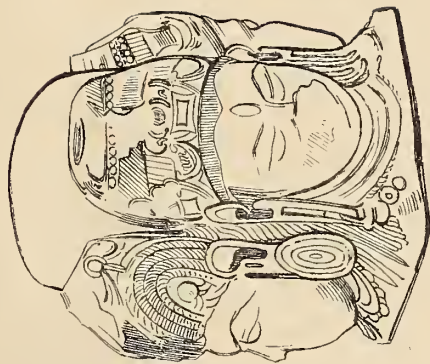


Fig 13.





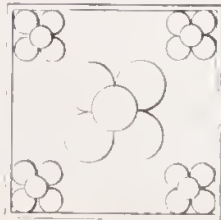


Fig 22

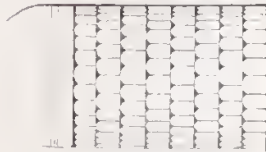


Fig 19



Fig 20

Fig 21



Fig 23

Fig. 24: A drawing of a female figure, possibly a statue or a person, standing with arms slightly away from the body.

Fig. 19, 20, 21, 22, different long
22. Group of Panathenaea
in a square form

margin.(63) The lower gateway has no inscriptions ; it is said to have been built by Amán Singh, rájá of Pannáh.

Immediately below this gateway there are on the right two sculptures built, the one into the parapet of the steps and the other into the wall of the gateway. The former is the upper portion of a highly finished male figure, called Tulsídás (64) ; the arms are missing. The latter sculpture represents Rávan, the king of Lanká (Ceylon), attended by a number of male and female figures and demons, in rows on each side of him ; according to the bráhmans, these figures represent his wives, relations, familiars, generals, &c. Over these is a row of what appear to be Linga, some bearing a head, others the usual division in the Ling, and one a figure combating an animal.(65)

The length of this sculpture is 4 feet 1 inch, from which some idea may be formed of the minuteness of the work, owing to which, and to the perishable material (sandstone), the extremities are much obliterated.

The upper row contains nine four-armed skeleton figures holding clubs or sceptres. In the 2nd row on the left are five four-armed figures, holding clubs or sceptres, and a kind of ball(66) ; on the right three four-armed figures, two hands joined, as if praying, the other two rest on intervening pedestals ; also three large figures, one holding a child and a sceptre, and another a musical instrument(67). The third row contains male and female figures with four arms, two hands, holding lotus, sceptre, and the other two resting on pedestals, also a seated figure playing on an instrument. In the bottom row are male figures with the lotus, sceptre, and pedestals, as above.

Rávan appears to have had 3 heads ; the only one remaining is that of a lion ; on each side of him is a female figure, seemingly surmounted

(63) नीलकण्ठ प्रणामदात्रक जुग जुग निचप्रति संवत् १५४७ समये वैशाखसुदि ११ गुरौकह लिखे

(64) A famous fakeer or gosáin.

(65) Some say that these emblems represent the gods, deotas, &c. who aided in the siege of Lanká,—so that this figure may be Hanumán ; others call them the “ das mastakh,” but as there are 12 of them, and have to all appearance originally been 14, I cannot understand that name.

(66) From the huge ear and fat bodies, these figures have the appearance of Ganesh, but they probably represent some monsters in Rávan’s army.

(67) Vina or Lute.

by the hooded snakes(68). In the small building on the left are several badly executed figures, viz. Ráma holding a sceptre ; Sitá with a closed lotus flower ; Lakshman with club and bow, an armed male figure discharging an arrow.(69) Mahádeo as Nandigan with worshippers, (vide note 13) ; Hanumán with his foot on the demon, who attempted to impede his approach to Lanká(70) ; there is also a small seated figure, with one standing and presenting an offering to it : among the numerous sculptures which line the right of the descent, I have selected 2 for sketches on account of their curiosity ; one is the sacred bull Nandi with Mahádeo in the Ling shape on its back, (vide Pl. XI. fig. 14), it is clumsily sculptured in a square niche, as seen in sketch ; near it is Kuver, the Hindu Plutus ; riding on the shoulder of his váhan, a man(71). The sculptures which are built into the wall at the foot of the descent, consist of figures of Ganesh, Mahádeo, Párbatí, Fakirs, and a male figure with a bull's head, called Singha Gerick. With a former report, I enclosed a drawing in outline of the most curious perfect sculptures among those over the small caves on the left of the descent ; (72) the remaining sculptures are so mutilated as to be quite unadapted for a drawing ; their arrangement is as follows : over the first or highest cave,(73) a figure of Gaurí Sankar(74), with male and female wor-

(68) This sculpture is very well executed : under the principal figure is an inscription of which only the following characters remain, the rest being broken off :—**वीरहलः
अल मभ.**

(69) Called by the bráhmans Bir Badh (Hero slayer) (?)

(70) I before called this figure Ganesh by mistake, the misnomer however is excusable, for the monkey's tail curled over his shoulder looks at first exactly like an elephant's trunk.

(71) Vide Plate XIV.—Kuver is a brother of Rávan, and also called Paulastya. The extremities of the figure are wanting, but he is usually represented with closed lotus, flowers. The sculpture is 3 feet 6 inches high ; it is let into the wall and has evidently been brought from elsewhere.

(72) Two figures of Kál-Bhairon and a skeleton form of Káli.

(73) This cave contains the sculpture given in the pencil outline which accompanied my last report ; I then called the principal figure Káli, which is correct, but it is Káli, as Durgá, the champion of the gods, and the decapitated animal is not a cow but the demon Mahishur in the shape of a buffaloe, who was slain by Durgá.

(74) Gauri Sankar. The meaning of this word is I believe Mahádeo and Párbatí incorporated, which is in fact the Ling and the Joni personated. This conjoint form of Párbatí and Mahádeo is also called arddhanári, from **अर्द्ध** half, and **नारी** a female, or arddha Maheswara, half Mahádev ; Siva is said to have thus incorporated himself with



shippers on each side ; over the 2d cave are small niches, two containing Ling and Joni in relief, with worshippers, and the remainders empty, though probably all at one time contained sculptures. To the right of 3d and over 4th cave are several figures of Mahádeo, both in the human and Ling shape, with a number of male and female worshippers ; another skeleton form of Káli, the bull Nandi and two armed figures, one discharging an arrow (Bir Badh), and the other weilding a sword, called Mahádeo ke pute (son) ; near this figure is the inscription (No. 4), dated ११८८, containing apparently the name of Madan Brimh Deo(75). The soft rock on which it is cut being quite exposed to the weather, the letters are very faint, and the dingy copy which I made is far more legible than the original. Below this and close to a figure of Narsingha, is the inscription No. 5, dated १२९२. The colossal Varáha-sarup lying on the ground in the corner of the fausse braie is much mutilated—the face, all the fore-arms and one of the legs being broken off. It represents Vishnu in the 3rd or Hog Avatár, in which he descended to recover the earth, which had been submerged in the waters of the universe by a demon(76). The figure is in very high relief, on a slab (11 feet 7 in. high) and proportionately thick. He is represented in a combatant attitude(77). The left foot raised on a sort of lotus pedestal or arch, under which are seated two female figures, surmounted by the hooded snakes, their lower extremities are in the form of snakes, which are coiled in a knot beneath them ; their hands are in the attitude of prayer(78). The fore-arms of this figure are all broken off, but traces sufficient are left to show that he held the usual symbols of Vishnu, viz. a gadá (79), padam(80), chakr(81), and sankh(82). He Párbatí to prove that he was all-powerful and possessed of both the male and female energies of nature.

(75) Madan Brimh was one of the Chandel rájás, who built many temples, &c. at Mahaba ; he is the immédiate predecessor of Kírat Brimh. In the list which I have before mentioned at Mahaba there is a large artificial lake which goes by his name.

(76) The three first avatárs are supposed to refer to the deluge.

(77) The attitude exactly corresponds with that of the Varásarup in the bass-relief of the 10 avatárs, and there is also a small detached sculpture of the same subject in which the attitude is the same and the weapons and symbols perfect.

(78) These figures are called Nág Kaueyá.

(79) Club. (80) Lotus.

(81) Wheel-shaped weapon (discus.)

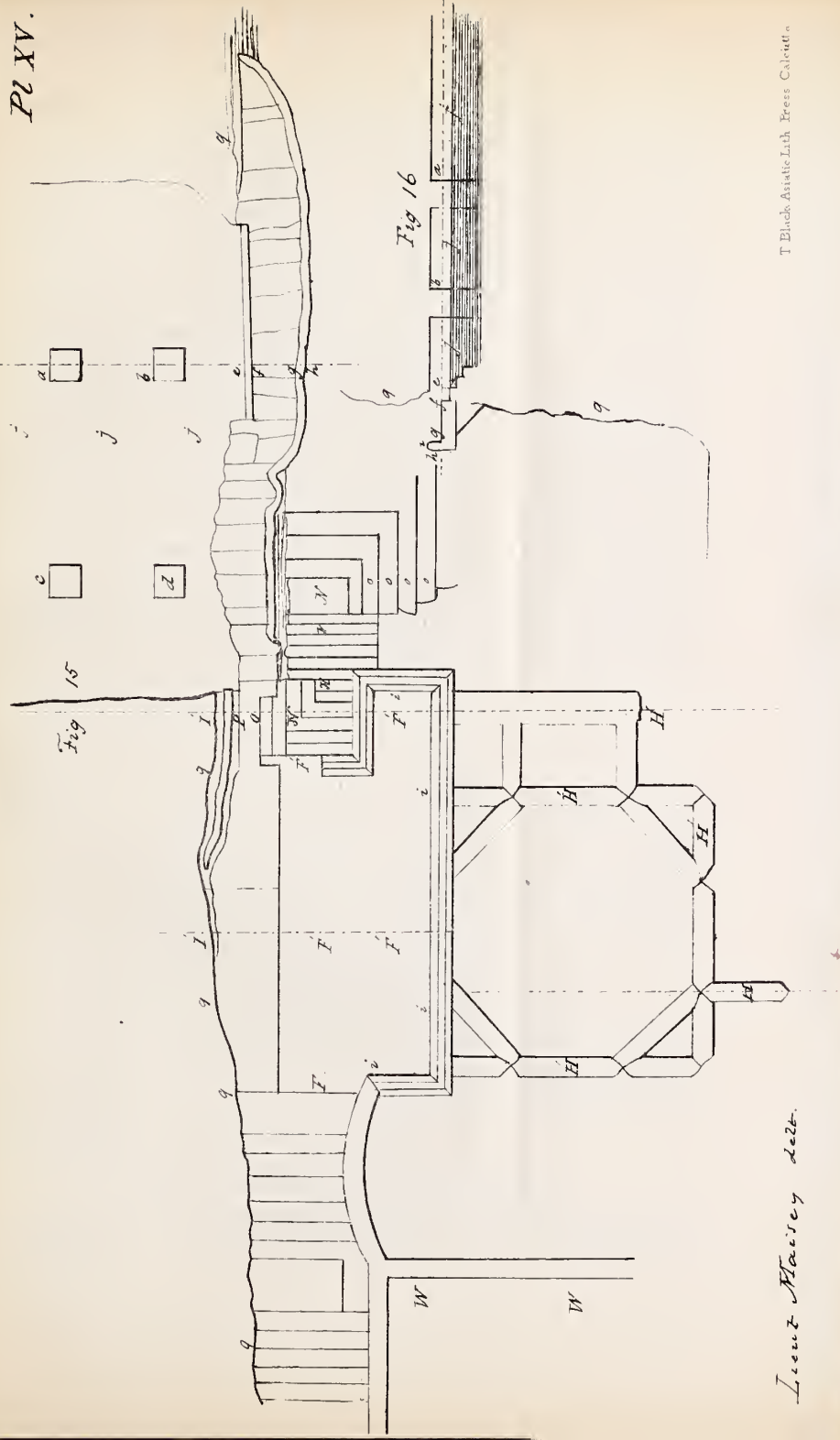
(82) Holy shell ; the chakr is supposed by some to represent eternity.

holds the chakr against his breast and the elbow of that arm supports Lakshmi; he has a rich garland of lotus flowers, and behind him is a kind of tree or stem which separates at top into three rich scrolls, forming a canopy over his head. There are two inscriptions on this sculpture, one at top and the other below, dated 1540(83); the former contains the name of Ganesha, and the latter Uddaichand; the words preceding which, "Sutr Ghar," are, I fancy a corruption of "Sutár," a carpenter, workman (Viskarmá). The space enclosed by the pillars, a. a. (MS.) Plate III. is called the Rás mandal(84). I have already described it and the pillars, so that the plates require no further explanation than what is given with them. I mentioned that the present building is only the basement story, and that there were originally seven stages (vide note 13). The small brackets or corbels, A. A. fig. 2, (MS.) Plate VI. and M. N. O. P. fig. 2, (MS.) Plate VII. are said to have once supported arches, the crown being let into the cornice; there are no traces of these arches(85), but it is evident that some support existed, as the holes in the bottom of the cornices on each face of the octagon are still visible. S. S. is a small passage running round the cave; it is lined all along with Linga (r r r r) of different sizes, and a raised stone gutter (fig. 183, (MS.) Plate III.) also runs through it to drain the cave, or rather to drain off the water which is poured over the image. It is roughly excavated, and a passage through it is a work of considerable bodily labour owing to its confined size, and the fact of the gutter running along its whole length at a less height than two feet; to explore it I was obliged to creep along on my hands and knees, alternately bumping my head against the gutter and scratching my knees against a Ling, several of which are right in the middle of the passage, and in these

(83) नन्दिफहलप्रणमगणेशा फंदि पदरफनिहतं संवत् १५४० नन्दिगणक प्रणम-
सत्रयरउदैचंद ४४० कार्तिक सुदि १५ नियप्रति संबत्.

(84) Rás mandal, from रास, and एडल, the former signifying a dance, and the latter a circle, circumference; this has probably some reference to the Zodiac रासचक्र (Ráschakra) Krishna's dance, called the Rásmandala, is described in Major Moor's Hindu Pantheon an astronomical meaning,—Krishna being represented as the sun, and the circle of dancers round him typifying the revolving celestial bodies.

(85) The arch was not, I believe, used by the Hindus until after the Musalmán invasion; the probability is that these corbels-supported ornamented cross pieces of stone, which were let into holes in the underside of the cornice.



Lieut. Mailey delt.

places it is necessary to sprawl at full length. The bráhmans say that this passage is a very important object to pilgrims, who attain great benefit from exploring it(86). The figure of Bhairon in the recess R. (MS.) Plates 3 and 4, already mentioned, is called the Bhatuck Bhairon ; it resembles the other figures of Bhairon, but is better preserved, owing to its being under shelter. The terrace over the facade of the cave, and in front of the Sarg Rohan(87), is shown in plan in Pl. XV., figure 15. The roof of the reservoir is supported by four neatly cut square pillars, left in the solid rock ; on one of them is a sculpture of Mahádeo and Párbatí, standing together in the usual attitudes, with a canopy of hooded snakes over them(88) ; I could not see these figures sufficiently distinct to make a drawing of them. There are several traces of inscriptions over the reservoir, but owing to the action of water, they are much obliterated. I made out dates of Samvat 1554 and 1579 ; the former bearing Manu's name. I could discover no inscription assigning a date to the Rás mandal. The stone flooring is covered with the names and dates of arrival of pilgrims ; among them many dates of Samvat 1400 and thereabout ; some of 1200, and one 1194, bearing the name Thákúr(89).

The long Sanskrit inscription No. 1, is a facsimile of that on a large black stone slab, leaning against a pillar opposite the entrance of the cave(90) ; to the left is a portion of another inscription given in fac-

(86) I imagine the confined excavation must be emblematical of the Joni or productive power of Párbatí or Bhaváni, also represented by the Arghá or pedestal of the Ling, and that the entering into and exit from it are emblematical of spiritual regeneration ; Coleman in his *Hind. Mythology*, p. 175, says—Perforated rocks are considered as emblems of the Joni through which pilgrims and other persons pass for the purpose of being regenerated ; the utmost faith is placed in this sin-expelling transit.

(87) The name given by the bráhmans to the reservoir before mentioned.

(88) The figures appear to be finely sculptured, and are about 2 feet high ; the bráhmans say that under the water is a large Ling image of Mahádeo, which confirms my supposition that the cave was originally free from water ; according to them the water is very deep at a little distance in, but I fancy the excavation is about the same depth as the other caves, for such a mass of water as their account would infer would long ago have carried away the slight screen of rock which is left to confine it.

(89) There is an inscription of the pillar, just above the cave given below :

नीलकण्ठ क ह प्रणम निखमवैशाख वदीवरसनीतारिक

(90) A copy of this is given in Col. Pogson's *History of the Bundelás* ; a great part of it is entirely illegible from rough usage, the stone having been used at one time to macerate tobacco on.

simile No. 2; this is on soft sandstone, and consequently was more difficult to transfer than the former.

The facade of the cave must originally have had a very rich appearance, but it is now so plastered with whitewash as to be quite spoilt; the lower portion is occupied by a row of standing figures of deotás, surmounted by scroll work; above these the facade is divided into moulded compartments, and has four pilasters, apparently corresponding in style with the pillars in the Rás mandal(91); the space over the door is divided into four compartments, each having a circular foliated ornament, all this part is studded with holes, which the bráhmans say are from the nails or pegs to fasten down the metal plates with which the door-way was formerly covered; a basement or plinth runs along the whole length of the facade, and is ornamented with figures of musicians and dancing girls.

The cave contains a black Líng about 4 feet 5 inches high, with 2 silver eyes(92); the side of the cave is relieved by several pilasters, on which are figures of fakirs, women, &c. They support a cornice containing figure of musicians, worshippers, &c. The small cave contains no sculpture, it is merely a receptacle for chiragh, gharás, &c.

The bass-relief of the Kurma avatár Pl. XVI.(93) is between the two

(91) The upper part of the facade on the right and left is much mutilated, and the two extreme pilasters are without capitals. The whole is so thickly whitewashed as to be quite useless in a sketch.

(92) It is a hideous image. I have given a small section of it in figure 4, Plate 4; in front of it is a small trough for the water and 2 stone slabs, on which the offerings are placed, n. n.; near this image is another coarse imitation of a face called Kirat Mukh, and a tawdry dressed up figure of Párbatí.

(93) In order to produce the amrita, water of immortality, during the operation various wonders rose from the sea, which was changed to milk: first the moon, then Srí or Lakshmí, Surádeví, the goddess of wine; the horse Uchaisrava; the jewel Kaustabh; Páriját, the tree of plenty; Surábhí, the beneficent cow, and the mighty elephant Airávat, the vahan of Indra; these emanations appear to have been shared among the gods. Vishnu getting Srí and the jewel Kaustabh, Mahádeo, the moon, which he placed in his head dress; Indra, the elephant, the cow, the tree and the horse Uchaisrava. In Coleman's Mythology another version of the Kurma Avatár is given, namely, that "Lakshmí in consequence of the curse of Durvása" (Siva) abandoned the three worlds and concealed herself in the sea of milk, so that the earth no longer enjoyed the blessing of prosperity and abundance. To recover her the gods churned the milky ocean, as related in the Kurma avatár, by this means Srí was reproduced as Rambhá, the sea-born goddess, the Venus Aphrodites of the Greeks.



pillars at v. (MS.) Pl. III. ; part of it is broken off; it represents the churning of the ocean with the mountain Mandára ; on the right is Indra with his Chhátábardár ; the mountain is represented by a human figure. Some of the wonderful emanations caused by this churning are shown in the sculpture : Srí, the goddess of plenty—seated near the tortoise, the Jewel Kaustabh, the white horse Uchairsava. The bráhmans say that originally all that are mentioned in the legend were represented in the sculpture. It is $4\frac{1}{2}$ feet long and $11\frac{1}{2}$ inches high.

Underneath this is another bass-relief of the 10 avatárs of Vishnu—in two rows. He is represented in all his incarnations ; several of the figures are represented standing and sitting on lotus thrones, and above the heads of the upper row is a kind of arched foliage(94).

The side entrance *C. D.* is flanked by small pillars, y. y. ; on the lower part of which are figures in high relief : one is a skeleton Bhairon and the other Ganesh, (Pl. XVII.) he is attended by his váhan the rat, and has six arms.

Another of these small pillars at *E.* has a figure of Brahma ; the upper portions of these pillars are divided into compartments containing small figures, mostly in indecent attitudes ; scattered about near these pillars are several fragments and mutilated figures, comprising a seated Brahma with his váhan the goose ; a seated female figure with a goose or swan, probably Saraswatí with her váhan the Hansá, emblema-

(94) The Avatárs of Vishnu seem to have had beneficent objects, in which they offer a strong contrast to the incarnation of the Greek and Roman deities, which were usually for vicious or selfish ends.

The Machh or fish was to restore the lost Veda which had been stolen from Brahmá by the demon Hayagrívá, or according to some, to warn king Satyavrata of the approaching deluge. The Kurma or Tortoise, to support the world during the churning of the ocean ; the Varáh or hog, to recover the world which had been submerged by the demon Mahāsir ; Narsingha, to punish the tyranny and unbelief of Hirankasipa : Vámana the dwarf, to humble the pride and reduce the power of Mahábali ; Parusrám, to avenge the wrongs of his earthly parents upon the Kshetriya race ; Rámchandra, to recover Sitá and dethrone Rávan the king of Lanká.

As Krishna he introduced the elegant arts, overthrew demons and wicked monarchs : as Budha he reformed and humanized the Hindu religion ; as Kalki, which avatár is still unaccomplished, he will appear at the end of the world mounted upon a white horse and annihilate time and space. The horse in the Kalki avatar is usually shown with his right foreleg raised and the belief is that the signal for universal destruction will be the stamp of that foot,

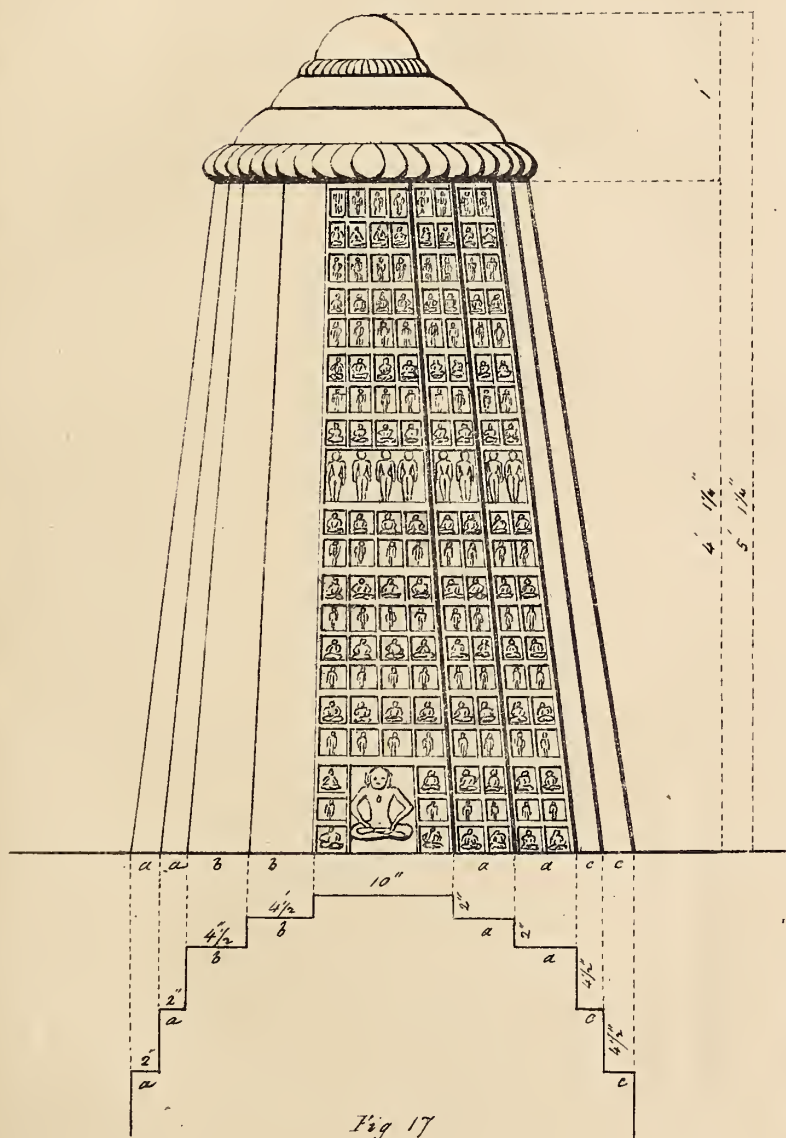
tical of the river Saraswatí or Sursutí. There is also a group of Mahádeo and Párbatí seated on a throne and attended by several male and female figures. Mahádeo has his foot on the bull Nandi and Párbatí her's on the lion, her váhan; under the throne is a small figure, apparently lifting it up, which the bráhmans say, is Rávan, who attempted to carry off Kailás the heaven of Mahádeo(95). The large Kál Bhairon I have already sent a sketch and description of; he has the moon in his head-dress of snakes and on his forehead a gem, which is often substituted for his 3d eye(96); he has the usual weapons and symbols in his various hands. In front of this immense figure a flight of steps leads to a postern under the rampart, opening into a lower enclosure; in this enclosure is the Sidh ke gupha, shown in plan and section figs. 5 and 6, (MS.) Plate II.; it is empty, with the exception of a small seat, fig. 7, (MS.) Plate II.; the door way is reached by steps; there are several short inscriptions here in praise of Nílkanth and other dieties; the dates are Samvat 1593, 1544 and 1500.

I think I have now described to the best of my knowledge all the objects of interest that are to be met with at Kálinjar, and my only fear is that I shall be thought to have entered too much into detail: however, I have expressed my meaning in as few words as possible, and any prolixity will I trust be excused in a paper treating of legends and stories so interminable, and sculpture and architecture so minute as those of the Hindus.

Having made a hasty visit to Ajighar near Kálinjar, I append a short note of what is to be seen there, thinking that it may prove interesting.

(95) The distorted figures which are seen in many Hindu sculptures, supporting larger figures or weights, represent Gutachue, the son of the forest king Heramba, and he is thus represented by architects to commemorate his infamy in having attempted the virtue of Draupadí, the wife of the Pándus during their exile; Bhima, one of them hearing of it, instructed Draupadí to make an assignation in the temple, and during their interview he tore down the columns of the temple, meaning to destroy the object of his rage. Gutachue to save himself and Draupadí, exerted gigautic strength and supported the whole fabric until released, in which painful and distorted attitude, he is usually shown by sculptures.

(96) Siva has three eyes, whence his name of त्रिलोचन, tri-lochan, answering to the Jupiter Triopthalmos of the Greeks, both are the personifications of Solar fire and the spirit of all created things. The seeming contradiction implied in the worship of Siva as the destroying genius and the creative principle also, is probably allusive to the laws of nature, in which destruction is merely decomposition, or reproduction in another form.



The fort of Ajighar,(97) about 16 miles from Kálinjar, is similar to it in its nature and situation, but much smaller ; the ascent is only partially fortified, and is steep and difficult. In this ascent there were, as in Kálinjar, seven gateways, three of which are still in existence.

To the left of the second gate is a Tirth called the Gangá Jamná, consisting of two contiguous kunds, merely divided by a thin partition of rock. They are both excavated and appear to be supplied with water in the same way as the kunds at Kálinjar ; on the rock over the kund is a long Sanscrit inscription a good deal obliterated(98) ; there are a few pieces of sculpture to be seen in different parts of the ascent, among which are figures of Ganesh, Hanumán, Nandi, &c. A little inside the top or main gate is a ruined tank, called the Digi-taláo ; it is cut partially in the rock and has steps leading to the water a short distance across the Parade, in an easterly direction, you see a stone enclosure containing a coarse image of Hanumán, about 6 feet high ; near this enclosure are some small fragments of figures. On the opposite side of the pathway, are the walls of a square building, which has apparently once had a conical roof(99). On one side of the interior of the building are 3 large naked figures of Parasnáth or Nemnáth(100), and 2 small similar ones. The centre figure is about 12 feet high—the 2 side ones about 6 feet ; the two latter are partially imbedded in the floor, the head and shoulder of the former protrude above the wall. The figures are naked and have 2 arms, holding in each hand a flower,

(97) It is said to have been built by a rájá, Ají Gopál, whence the name.

(98) I could not discover a date and was unable to make a copy of the inscription, as I had no materials at hand, having merely ridden over to see the place, intending to return and do any thing that appeared of interest. I was unable to put my intention into practice, as at the time of my completing the Kálinjar work it rained so much for a few days as to preclude any possibility of my going, &c. I had not time to wait longer.

(99) The ornamental stone which crowned the apex of the roof is lying near ; it is covered with small figures alternately setting and standing in rows ; they all appear to be figures of Parasnáth.—A sketch of this stone is given Pl. XVII. ; it is 4 feet 8 inches high.

(100) Parusnáth, the lord of men, or as in Coleman's Parswanátha, is according to him the principal deity of the Jaina sect, and by some supposed to be their founder. He is thought to be identical with Vishnu, and is known under 10 forms or avatárs. The account given of him by the Ajighar bráhmaṇ is that he is a devil and not a god, and worshipped exclusively by the Sarowgi or Sarawak class, and Bunniyahs, who according to the tale of the bráhmans used formerly to immolate bráhmaṇ children to it.

probably a lotus ; on the breast is a gem or perhaps a flower, called the Duk Dukke (101); the hair of the head is short and curly (vide Pl. XIII. fig. 23) outside are several other pieces of sculpture, including figures of Devi, some seated figures of Parasnáth, &c. ; a little beyond this is a large tank, excavated in the rock, with steps leading to the water ; under a pepul tree on the side you first reach, are several Ling and Joni, a Ganesh and a slab, 18 inches square, covered with small Panchánan Ling like a chess-board. There are also a large Panchánan, or Panch-mukhti Ling figures of Mahádeo and Párbatí and Nandí, the latter at the right hand. Corner of tank, on the right bank, is a large ribbed stone, which formerly crowned the apex of the Pagoda, which will be shortly mentioned. On the east bank are two buildings of a plain and modern appearance, one is empty, and the other contains small insignificant figures of Náráyan and Lakshmí, Ajípál, Ganesh and Hanumán ; close to the building is a Vará sarúp, (figure of Vishnu as the hog), it is about 5 feet long, and of coarse workmanship, and is standing on the dry bed of the tank.(102)

The chief objects of interest at Ajighar are four ruined buildings ascribed to Parmál, and called Chandelí Mandir ; three of them are temples, two dedicated to Bhagwán or Vishnú, and the third to Mahádeo ; the 4th building is of a confined cross shape, called Parmál ke baith ke. These buildings are on the bank of a large tank called Parmál ke taláo. The three temples are in a very ruinous state, but enough remains to show their design, and the gorgeous appearance they must have had when perfect. The general plan of them is a circular or poly-angular enclosure, exactly like the Rás mandal at Kálinjar, and called by that name, but the pillars, though very rich, are less elegant, owing to their squat proportions ; in each of the temples is a small and elaborately carved doorway opening on a small recess or shrine, which originally contained the effigy of the deity (answering to the cave of Nílkánth) ; the conical roof or dome is over the shrine. The outside of the temples are most elaborately carved in a succession of rich mouldings and scrolled pannels, with figures here and there, the whole having

(101) Probably a gem, from which perhaps the name is derived, Paras or Parasnáth, lord of the gem.

(102) It resembles the image of the hog at Kálinjar, but is much defaced in consequence of the softness of the material.

a very light and elegant appearance: notwithstanding the profusion of ornament. The first of the three temples are pretty perfect, excepting the conical dome; it consists of a series of squat and highly decorated pillars in the shape of an octagon inside a square, with a small similar series inside, the whole roofed over with richly covered slabs, and having I think originally sustained an upper story. The door leading to the shrine is beautifully carved.

The second temple has only one series of pillars forming a circle in a square(103); the cornice is very rich. The Rás mandal is not roofed over, but the bráhmans say, that it was formerly surmounted by a domed roof. The shrine in this one is also very beautiful and the conical steeple more perfect. The Shíwálá is much mutilated, but it has evidently been similar to the others. These buildings are all formed without cement,—the stones being fitted closely into each other. The steeples or roofs are solid, and formed of rough unhewn stones inside, merely the outer layer being cut smoothly. There would have been ample material for drawings from these beautiful architectural specimens, but as I have before stated, I was unable to revisit the place.

EXPLANATION OF PLATES.

Plate VI.—Fig 1. General view of the plan of Kálinjar Fort, &c.

- J. Koth Tírh.
- K. Bijlí Taláo.
- L. Ramnáh.
- M. Sanícharí Taláo.
- N. Taleyá.
- O. Madár Taláo.
- P. Entrance gateway to the descent to Nílkanth.
- Q. Nílkanth.
- S. Amán Sing's gateway.
- a. Alm dúrwaza.
- b. Ganesh ditto.
- c. Chandrí ditto.
- d. Gateway opening on the path leading to Balkhandí Mahádeo.
- e. Budh Budr darwaza.
- f. Hanumán ditto.

(103) I have given a sketch of one of the pillars in Pl. XIX.

- g. Ditto Kund.
- h. Lál darwáza.
- i. Bhairon Kund.
- j. Main gate.
- k. Situation of Sitá-sej.
- l. Ditto of ditto Kund.
- m. Ditto of Pátál Gangá.
- n. Situation of Pándú Kund.
- o. Breach.
- q. Burhiyá Taláo.
- s. Path to Bhagwán-sej.
- u. u. Fause braie round gate.
- v. Pannáh gate.
- w. Mrig Dhárá.
- x. Posteru leading to Kunds, called Khumbar.
- y. Singhársila.

Fig 2. Section on *A. B. C. D.* of fig. 1.

Plate IX. fig 7, Plan and fig. 8, Section of Mahádeo Kund.

Plate X. fig. 9, Plan, and fig. 10, Section of Mrig Dhárá.

Plate XV. fig. 15. Plan of the terrace over the façade of the cave, showing the reservoir called Sarg Rohan, the terrace in front of it, the steps leading to it and the shape of the entablature (H H H H H.)

F' F' F' The terrace. (The black dotted lines I' F' F' H' and I' P' O' N' F' H' correspond with the lines A B C D E, and R A' B' C' D' E', in (MS.) Plates 3 and 4.)

M' N' &c. o o o o steps. W W top of building, containing musical instruments ; i i i i i, Parapet of terrace, q q q q line of rock.

Fig 16. Section on *a b e f g h* of fig. 15.

a b c d, Pillars supporting roof of Sarg Rohan, (on the pillar *D* is the sculpture mentioned ;) j j j Level of the water in the Sarg Rohan.

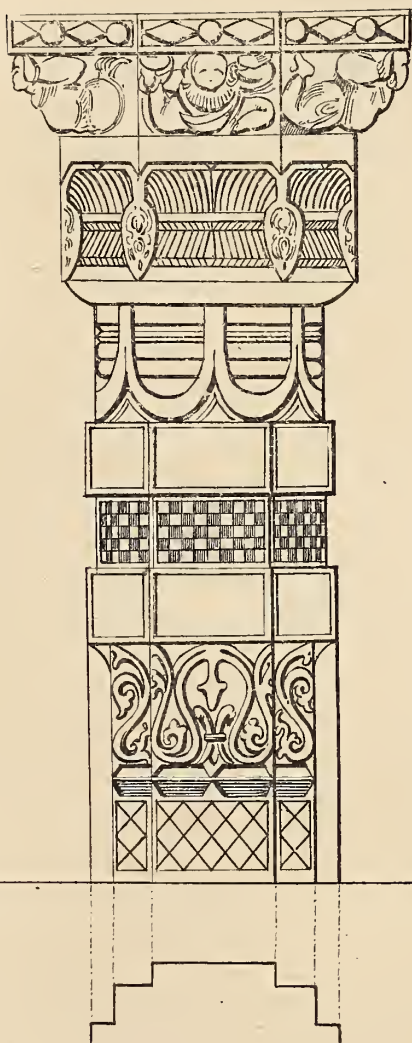
Plate XX :—

Fig 1. Elevation of the capital of a rectangular column, and the entablature over it, with their ornamental carving. The whole of the entablature is of this style, except the inner faces of the octagon, (Plate XXI.) and the fragment shown in fig. 4.

Fig 3. Elevation of a base (the same in each column.)

Fig 4. Elevation and profile of the fragment of cornice over the entrance (MS. Pl. 4, fig. 2.)

Fig 5. Elevation and profile of the side of the stone floor or basement within the Octagon.



Lieut. Maisey delt.

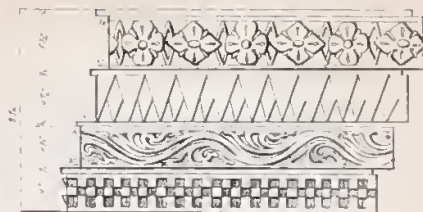


Fig 4

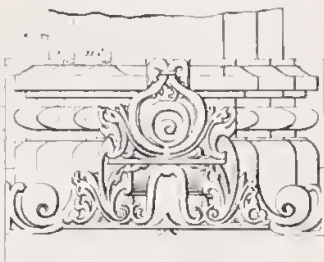


Fig 3

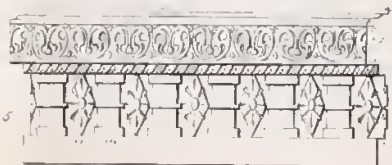


Fig 5

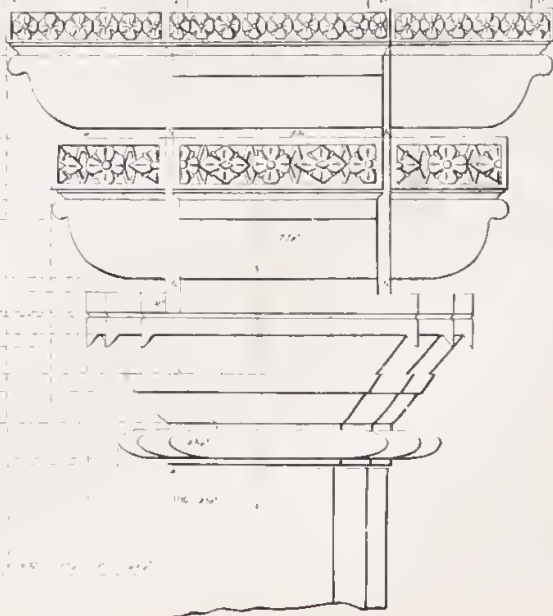
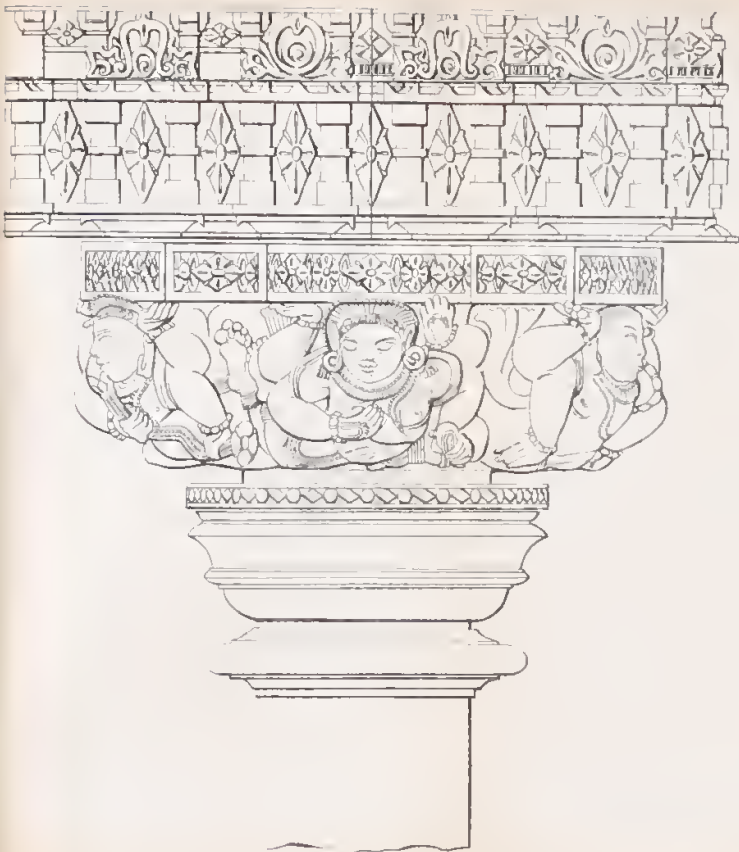


Fig 1


Assut. Monceau del.





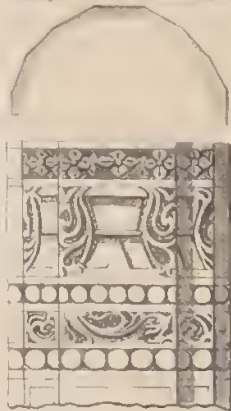


Plate XXI:—

Elevation of a grotesque capital and its ornamental carving and entablature at the angle of the Octagon. The elevation is taken from the interior of the Octagon, as the entablature on the inner side is carved differently from the other portion.

Plate XXII:—

Drawing of another grotesque capital.

Plate XXIII:—

Carved chafts of both orders of columns in front of the cave.

NOTE.—The Editors regret that owing to the sickness of the Pandit upon whose assistance they relied in transcribing the inscriptions which should form the Appendix to the foregoing paper, they are compelled to postpone the publication of these till next month.—EDS.

Journal of a trip through Kulu and Láhul, to the Chu Mureri Lake, in Ladák, during the months of August and September 1846.—By Capt. ALEXANDER CUNNINGHAM, of Engineers.

Leaving Simla on the 6th August, we proceeded viâ Kunihár and Sáhihetí to Biláspúr on the Sutlej, which we reached on the following day, and on

Saturday, 8th August 1846, we crossed the Sutlej in the ferry-boat, which was swept down the stream a considerable distance, the river being then at its greatest height. Some of my baggage was conveyed across on *dhrés*, or inflated buffalo skins. Baron Hugel erroneously calls them *ox-skins*; a mistake which has not been corrected by his translator Major Jerry, who as an old Indian officer should have known better than to transport Hindus upon ox-skins. But the Major has been guilty of a bold piece of pictorial invention in the manufacture of a sketch to illustrate “the method of crossing rivers in the Punjáb on inflated skins,” where the buffalo skins are represented with horns, ears, and tails, as if the animal were alive, floating with the back out of the water, and the paddler astride across the back. In reality the skin floats upon its back with the legs upwards, and the paddler lies across the skin with his feet on one side—hanging in the water, while he grasps one of the legs in his left hand, and uses a small paddle with

his right hand. The horns and ears are removed and all the orifices are carefully sewn up, with the exception of one leg, which is left open for inflating the skin, and when in use, is secured with a piece of string or a leather thong. When crossing upon a single skin the passenger generally sits across the back of the paddler, or kneels upon the skin to keep his feet dry, whilst he holds on by the legs of the skin. A preferable mode of crossing is by two skins with a *charpai*, or bedstead fastened upon them, on which the passenger sits safe from all mishaps, unless the waves should be high, when there is the certainty of being well wet with spray, and the chance of the skins being separated. As it rained heavily and the road was dangerously slippery, we halted at Chatwali-ki-heti, distance only 5 miles.

Sunday, 9th August. Marched again through heavy rain to Kumár-ki-heti, distance 6 miles. Baron Hugel spells this name *Kumagaheti*, and states that *gaheti* means a serai or lodging. This is a gross mistake, which might be pardonable in the traveller, but which cannot be passed over in the translator. *Ga*, *ka* or *da*, is the sign of the genitive case throughout the Punjáb, and *heti* means a shop. Kumar-ki-heti, or Kumár-ga-heti is therefore the shop of Kumár. Some of these *hetis* are single shops on the road-side, and they take their appellations from any local peculiarities of situation as well as from the names of the Banyas or grain-sellers who build them: thus *Bur-ki-heti* is the "shop under the Banian-tree," *Ghati-ki-heti*, is the "shop on the ghat," &c. &c.

Monday, 10th August. To Ghorí Matolí, 8 miles.

Tuesday, 11th August. To the Sikunder ki dhar, 6 miles.

Wednesday, 12th August. To Mundi, 16 miles, over the Pass. On the previous night we slept at the village of Barla, not far from the top of the Pass; this morning we found the height of the Pass to be 5,430 feet above the sea. As the Sikunder-ki-dhar had attracted the attention both of Moorcroft and of Vigne, we made inquiries on the spot from the people of the country who were with us, in order to ascertain what foundation there was for Vigne's identification of this spot as the locality of the altars of Alexander. His words are—"no place could possibly have been chosen which would have been better adapted for the altars. Being by the side of the highway it became impossible for

any one to pass without seeing them.”* It will be sufficient to observe that the Sikunder-ki-dhar is on the high road which leads to the poor country of Ladák, and not any where near the high road which leads to the rich provinces on the Ganges, whither Alexander was directing his steps, when his soldiers refused to proceed farther : on which occasion he erected twelve altars of stone on the eastern bank of the Hyphasis or Byás. It is besides particularly recorded that there was a desert to the eastward of the Hyphasis on Alexander’s proposed route. I presume that Mr. Vigne will scarcely be so bold as to identify this desert with the luxuriantly rich valley of the Suket river, which lies to the eastward of the Sikunder-ki-dhar. He appears to have been chiefly attracted by the name and by “some ruins surrounded by a trench cut in the solid rock.” Moorcroft however, with his usual sound judgment, came to a different and more probable conclusion regarding these ruins ; of which he says :—“The whole was evidently the remains of a fortified camp, but I found nothing to indicate a Grecian origin.”† I found that the Baori or walled spring of water just below the Pass was also called Sikander-ki-baori, which as well as the ruins was attributed by the people to a Sikander, but not to Sikander Zulkarnein, or Alexander the Great. If the name has reference to a king, which is perhaps doubtful, I should incline to refer it to Sikander Lodi, the great image-breaking king of Delhi, who delighted in destroying the temples and gods of the infidels. Had he heard of the temples of Mundi, he could only have marched there from Kangra, (which was the Mahomedan head-quarters) over the Sikunder-ki-dhar, and in that case, there is nothing more likely than that he should have formed a camp on the hill to command the high road, whilst engaged against the infidels in the valley below.

Saturday, 15th August, 1846. Crossed the Byás by skins at 5 P. M. The river was running rapidly—the right bank very much cut up, and huge rocks still falling into the stream. We heard the plunges of many of them while we were at Mundi ; halted for the night at the village of Air. So great a rise in the Byás, has not, it is said, occurred for the last hundred years.

Sunday, 16th August. Started at half past 5 A. M. ; road for first mile almost obliterated by the Byás ; marks of the high flood were clearly

* Vigne’s Kashmir, i. 104.

† Moorcroft’s Travels, i. 69.

traceable along the steep banks where the river has washed away every particle of earth and every trace of vegetation, and left the rocky strata bare for about 25 feet in height. The rocks look exactly as if blasted with fire along the course of the river, which is the more remarkable now from the green freshness of the foliage about. At 4 miles the road turns to the east, and ascends very gradually to the top of the Pachind Pass.

The Pachind Pass is 4,900 feet above the sea, and the level ground on each side of the Pass partly under cultivation, is 5000 feet high. This Pass commands the high road into Kulu. From the round topped hills right and left of the Pass, distant less than a mile, can be seen the fort of Bhyrkot in Kulu, the Jinetri Devi temple and the peak of Sháli near Simla. As a military position I consider Pachind as the most eligible that I have yet seen for the location of native troops. The height, 5000 feet, is sufficient for coolness. There are good slate quarries immediately below the Pass to the west, and a considerable supply of water, only 150 feet below the pass on the eastward, partly preserved in a well constructed Baori, but chiefly running down the face of the hill. This is a never-failing spring, and I observed no difference in the supply of water before and after the rains. I crossed the Pass on the 16th of June, first, and again on the 16th of August.

The iron mines of Kumán lie only 4 miles to the eastward; there is plenty of good building stone at the top of the hill; and there is wood procurable below the Pass in the neighbourhood of the slate quarries.

The position is 6 miles N. E. of Mundi, and it commands the high road, and only horse road which leads from the Kangra and Mundi districts into Kulu, and if it should be found necessary to locate troops in or near Kulu I would strongly recommend Pachind for the cantonment. Two companies might be stationed in Bhyrkot, and the communication be kept up with Pachind by signals of guns, both day and night.

From Pachind the road descends rapidly to the bed of the Ohl river, a large torrent unfordable at all seasons. At the foot of the descent there was formerly a spar bridge across the Ohl, but the horizontal spars were burnt during the insurrection against the Sikhs a few years ago. The piers and sloping spars are however still perfect, and as they have withstood the extraordinary flood of this year, they are likely to

stand as long as the materials will last. Beyond the bridge the present road continued up the right bank of the Ohl river for half a mile, to a spot where the stream is rather smooth—and there we crossed upon skins—the clumsy but useful Dhrés. The Ohl rises in the snowy range, about three days' journey distant, and close to the source of the Serbrie river, which joins the Byás below Súltanpúr, in Kulu. From the Ohl the road ascends to the alluvial flat and then descends to the Utr-sál nullah, which we forded with difficulty. By repairing the broken bridge across the Ohl this ford would be avoided. From the ford the road continues up the left bank of the Utr-sál rivulet to Kumán, where are the iron mines, about 200 yards to the right of the Bunyá's house. The ore lies in thin layers and streaks in a dark micaceous sandstone. The stone is so soft that it is pounded by hand with small round boulder stones. It is then washed in small wooden platters and the sand is poured off with the water, leaving the ore in the shape of a coarse black heavy sand at the bottom. One seer of this ore yields half a seer of iron. The metal is considered good, and is sold on the spot at $2\frac{1}{2}$ rupees per pukka maund, or 1 rupee per kucha maund, of 12 seers, which is cheaper than it was in Moorcroft's time, when the price was $3\frac{1}{2}$ rupees per pukka maund.

From Kumán the road descends to the Utr-sál nullah, which was again forded with less difficulty than before. We halted at Utr-sál in the Dharmśála, which was 4,255 feet above the sea.

Monday 17th August. To Bajaora, 9 miles. The road from Utr-sál to the foot of the Ghât was but little injured by the heavy rains of this year, but the ascent of the Bajaora Ghât, which is commonly called Kandi, was very much cut up. The ascent lies through a thick forest of large trees, and the ground is literally enamelled with flowers, among which the wild sweet-scented pea is very luxuriant. In June, when I crossed this Pass before, asters were the commonest flowers, but they had now disappeared. On the eastern face the road was completely obliterated, excepting in a few isolated spots. The heavy rains of this year have swept away all the alluvial soil from the bed of the Bajaora nullah, and left behind only a wreck of enormous boulders and fragments of trees. It appears to me that it would now be very difficult to make a road down the course of the nullah, on account of the steepness of the hills on both sides. As this was the high road

through Kulu to Ladák, I presume that the Government would wish to keep it in good order; and I would suggest that instead of attempting to repair or rather to re-make the road down the Bajaora nullah, it would perhaps be better to take a new line altogether from the Bajaora Pass towards Bhyrkot, keeping the road below the fort. This part I have not examined; but from the fort downwards to the Byás there is at present an excellent foot-path along the gently sloping side of the hill, passing through villages and corn-fields for above five miles to the bank of the Mâwar nullah beyond Sumsi. By taking the road in this direction a saving of about 4 or 5 miles would be effected in the distance between Mundi and Súltanpúr.

The height of the Bajaora Pass is 6,484 feet.

Tuesday 18th August. To Súltanpúr, the capital of Kulu, 9 miles. At two miles crossed the Kokan Khud. Kokan is a large village on a spur of the hill, with a new picturesque Chinese looking temple—chiefly built of wood. Since I was here in June last, the Kokan torrent, owing to the late heavy rains, had destroyed a large tract of well cultivated land 200 yards at base, by 250 yards or more in depth. The whole of this tract, which two months ago I saw smiling with young green rice, is now covered with large blocks of mica slate, in some places about 20 feet thick. The only part of the Sikh road now traceable is near a large tree, which is still standing in the midst of the rubbish, with its square stone terrace around the trunk, for the accommodation of travellers to rest beneath its shade.

The delta of the Mâwur nullah is now about 400 yards broad at the base, by five or six hundred yards in depth. Only two months ago it was a well cultivated tract, but it is now strown over with huge blocks of mica slate and thousands of trees, and fragments of trees of all sizes, looking like Nature's timber-yard.

Just before entering Súltanpúr, we crossed the Serberi nullah by two spars thrown across the stream, the bridge having been carried away by the floods. The bed of the Serberi is also strown with trees, but there are no marks which show so sudden and great a rise as must have taken place in the Bajaora and Mâwur nullahs. The heavy rains must have been confined to the hills south of the Serberi. Probably the Parbati, Gomati, Synj, and Tirthan also rose very high this year, for the first has carried away all the bridges built by Lena Singh on the road to the

hot spring, called Parbati Kúnd, and the others have carried away all the bridges on the lower part of their course. Even small dribbling threads of water, as they appear now, were (about the 1st, when the floods happened) large enough to move blocks of stone about 10 feet cube from 100 to 150 yards along a very gentle slope, and to cover the fields 10 feet deep with clay and sand.

These floods fully account for the unprecedented rise of the Byás river, which the people of Mundi say has been higher this season, than for the last one hundred years. All the small streams which feed the Byás, have this year swept down large trees and enormous blocks of stone, along with clay, sand, boulders, and mud ; and have deposited a mass of rubbish on the alluvial and cultivated flat on the banks of the Byás. A similar flood must have occurred at least once before within the last 250 years ; for at the village of Háth, opposite Bajaora, there are two stone temples which were built by Syáma Sen, Rájá of Mundi, just 250 years ago, one of which is on high level ground, but the other is more than half buried in rubbish, about 10 feet deep, which tradition says was brought down by the Bajaora nullah more than a hundred years ago, on account of the negligent government of a certain Bhosul Rájá. His extreme carelessness regarding the affairs of government has passed into a proverb, which is in the mouth of every one.

Bárah pétub, athárah dáni,
Bhosul Rájá, khabar na jáni.

Which may be translated—

One of twelve gourds took each exciser
And Bhosul Rájá none the wiser.

The town of Súltanpúr is surrounded with dry stone walls ; only 200 of the houses are now inhabited, and the place appears to be nearly deserted. In 1839 about 400 houses were inhabited, but even in Moorcroft's time, A. D. 1820, the town bore marks of decay. He says, "Kulu is of no great population or extent." There were formerly between 600 and 700 inhabited houses. The town is also sometimes called Raghunáthpúr, from a temple dedicated to Raghunáth.

Wednesday 19th August. Marched to Dwára, 10 miles. Road along the right bank of the Byás, paved with large stones from 10 to 50 feet above the river for the first 3 miles. It then descended to the

bank of the river, and continues along the water's edge for some distance. The stream divides, and winds amid luxuriantly wooded islets, now rushing impetuously in one sheet of white foam over rocks, and again murmuring occasionally unseen between overhanging trees; now joined by torrents vehemently roaring and white with foam; and again gleaming placidly in the sunshine between the numerous islets, which are covered with many kinds of trees, including the apricot, the peach, the apple, and the pear—with the wild vine and wild fig. The scenery is remarkably beautiful, and extremely pleasing to the eye from its greenness and variety.

Just before reaching Dwâra, we crossed the Phajloti or Phajráni nullah by a bridge of spars 100 feet in length, with a planked roadway 4 feet in width. The span of the bridge was 60 feet, with a rise above the stream of 18 feet. The Phajráni is a large unfordable nullah, with a bed full of boulders.

At Dwâra we procured fine large wild apples with plenty of good cucumbers and peaches. We put up in the same Dharmśála, which Capt. Broome and myself occupied in 1839. A Dharmśála is properly a traveller's house, and it is sometimes attached to a temple, as at Dwâra. In 1839 it was unoccupied, but this year we found that a Gosáin had established himself in the building—to the exclusion of all travellers, who are obliged to put up in an open shed close to the Dharmśála. Height of Dwâra 5,150 feet above the sea.

Thursday 20th August. Marched to Monáli, 14 miles. For the first two miles the road lay along the edge of an alluvial flat, it then descended to the low ground near the river which was covered with boulders and jungle, through which it continued for one mile, occasionally along the brink of the river. It then ascended a rocky point, and again descended to the river, in which, at the foot of the cliff a pathway about 50 feet in length was constructed of loose stones, which were covered with water. Beyond this point to the Sitá kúnd, 9 miles from Dwâra, the foliage was very thick. The large sweet pea, and small plants, with pink and blue bells were very common; and the jungle was filled with the gigantic nettle, 8 and 9 feet high, with leaves more than a foot broad, and from a foot to a foot and a half in length.

The Sita-kúnd is a hot spring of a bitter taste: temperature 104°; the same as I found it in 1839. It is 5,700 feet above the sea, in the middle

of the valley, and only a few feet higher than the level of the river. It is surrounded by a low wall of masonry, and is enclosed in a small tank 12 feet square, and 3 feet deep.

The road from the hot well to Monáli for five miles lay through a thick tree jungle. The occasional glimpses of the Byás shining amongst the trees with its numerous tributary torrents dashing and foaming over huge rocks as they descend into the river, are very beautiful. The height of Monáli is 7000 feet above the sea ; just before reaching Monáli, we crossed the rivulet of the same name, a large unfordable stream, by a spar bridge, 60 feet in length.

Opposite to Monáli is the village and hot spring of Vashishta Muni, a celebrated saint, to whom common tradition assigns the origin of the name of the Byás. The Sanskrit name is Vipása. The origin of the name is thus related in the Mahábhárat : Vashishta Muni, being overwhelmed with grief on account of the death of his sons, who had been slain by Viswamitra, became weary of life, and having tied his hands and feet with cords threw himself into the Byás river ; but the pious river burst his bonds, and wafted him ashore unhurt.

The following explanation of the above legend appears to me as simple as it is natural.

Just below Monáli and the hot springs and village of Vashishta Muni, the valley of the Byás closes in, and the gneiss rocks which have been thrust up through the mica slate are scarped on both sides of the valley, forming opposing cliffs, which rise to a height somewhat greater than the levels of Monáli and Vashishta Muni. The lower village of Monáli is situated on an extensive alluvial flat, below which, on the opposite bank of the Monáli nullah, there is a long spur covered with pines, which stands out prominently, and stretches nearly across the valley. This spur is much higher than the level of the Monáli lands, and I have no doubt that it once extended right across the valley, and pent up the river, which must then have formed a large lake, the bottom of which was the extensive alluvial flat of Monáli, which could only have been formed in this manner. Indeed, there is every appearance of the former existence of a lake in this part of the bed of the Byás, from which the waters made their escape between the gneiss cliffs just below Monáli and Vashishta Muni. When the lake existed the hot springs must have been covered by its waters. In the

course of time, as the gneiss rocks were either gradually worn down, or suddenly rent asunder, and swept away by the Byás river, the hot springs of Vashishta Muni were brought to light, or to use the language of the legends "the bonds of Vashishta Muni were burst" by the waters of the river, which was afterwards called *Vi-pása*, or "the bondless."

The Mahábhárat further relates that the sage Vashishta, being determined on suicide flung himself afterwards into the Satadree or Sutlej; but the pious waters of the river divided themselves into a hundred shallow channels and left the disappointed sage on dry land: from which the river was ever afterwards called *Satadree*, "the hundred-channelled," from *Sata*, a hundred, and *dree*, to flow.

Friday 21st August. Marched in the afternoon to Boorwa, distance five miles. We were detained at Monáli making arrangements about provisions, which we are obliged to carry with us, as Láhul and the countries beyond produce little or no wheat. The road from Monáli to Boorwa was good; the latter part much blocked up by numerous gneiss boulders, with which the whole of the Boorwa plain is thickly strown over. The cultivation about Boorwa was principally buckwheat.

Height of Boorwa above the sea, 7500 feet.

Saturday 22d August. Marched to the Les-dhâr Dhurmsála—8 miles. Just beyond Boorwa we crossed the Sarahi nullah, an unfordable torrent, by a spar bridge. From this point the road was a gentle ascent at first, then rather steep by steps built in the rock where the Byás is confined between precipitous cliffs. Just beyond Rálha, a halting place 5 miles from Boorwa, there is a picturesque fall of 20 feet, in the Byás, where the bed of the river is contracted to 8 feet in width. The same tree is lying across the stream, just overhanging the fall, which I observed in 1839, but it is now much decayed. Beyond Rálha, the ascent is by a flight of stone steps, generally very steep, to the Lés-dhar Dhurmsála. The ascent was extremely fatiguing, and rain having fallen during our journey, we found the wind piercingly cold even in the Dhurmsála, which being built of dry stones without any cement admits the air through a thousand crevices. The height of Lés-dhar above the sea is 10,500 feet. There are two buildings, about 20 by 10 feet, which were erected by Lena Singh Majithia since 1839, when I formerly travelled this road.

Sunday 23rd August. The ascent from Lés-dhar to the top of the Pass was gentle and easy. There was no snow on the Pass, and we were able to trace the Byás river to its actual source, 300 yards beyond the block of mica slate noticed by Moorcroft, to a ridge of mica slate at the top of the Pass, from beneath which it trickles forth in a gentle rill. Just below the block of mica slate a new temple has been built by Lena Sing Majithia, dedicated to the Rishi Vyása (or Byás Rikhi) the compiler of the Vedas. The Pass is 13,000 feet above the sea.

The descent from the top of the Pass to Koksar, the first village in Láhul, was steep but easy; the distance about 5 miles.

Monday 24th August. The jhula, or suspension bridge over the Chandra river, not having been put up this year, we were obliged to halt on the left bank opposite to Koksar. This jhula is annually carried away by the snow, which is drifted down in enormous masses from the hills to the south. The river too is constantly varying in width. In 1820 when Moorcroft crossed the Chandra the jhula was only 96 feet long. In 1839, when I travelled this road before, it was 106 feet long: but this year it was 210 feet in length. One cause of the greater length of the jhula was the undermining of the projecting rocks on the southern bank, from which the bridge was formerly sprung. Large masses of this rock were lying immediately below the jhula.

This description of bridge is quite safe; but it is very unpleasant to cross, from the little height of the suspension side ropes above the foot-rope, and the great play of the bridge, which swings about very much from side to side, as well as up and down, whenever more than one person goes upon it. I have seen a woman, a native of the country, sit down in the middle of the bridge, and scream for assistance; many of the coolies also cannot cross with their loads, which they are obliged to make over to people of the place.

The Koksar jhula was formed of two side suspension ropes and a foot-rope connected with the side ones by smaller ropes at short intervals. Each of the side-ropes was formed of seven birchen-twig cables of four plaits, and the foot-rope consisted of three cables of the same thickness.

Tuesday, 25th August. Crossed the Chandra river to Koksar. From this place there are two roads leading into Piti—the first down the Chandra river, the second up the river. The first, which is the better road, is that which we followed; the second, which is much the shorter

one, is described as being very bad for the first half. By this route a laden coolie can travel from Koksar in Lâhul to Losar on the Piti river in six days. The marches are the following.

1. Old Koksar (deserted) on the left bank of the Chandra.
2. Halt (name unknown) ditto ditto.
3. Shigri, ditto ditto.
4. Hoolyâs, at the foot of the Koolzoom Pass.
5. Hoolyâs, on the opposite side of the Pass.
6. Losar.

Two other roads from Kulu, namely, one up the Parbutti river, and the other up the Raini rivulet, both join at Shigri. They are described as being seldom used, on account of the difficulty of the Passes.

Small firewood of furze bushes is procurable the whole way from Koksar to Losar.

Wednesday, 26th August. To Tehling 5 miles. Road stony, but generally good. The ascents and descents of the nullahs steep and bad. These might easily be made better with a very little labour.

Thursday, 27th August. To Sheeling, 7 miles. At Sisu we crossed the nullah of the same name by a bridge; the water foaming and roaring between precipitous rocks, with a fall of about 50 feet immediately below the bridge.

Friday, 28th August. To Goondla or Râni ki koti, 4 miles. Road good throughout. Halted here on account of fever and ague, and to make arrangements about coolies and provisions. During our stay at Goondla the greatest difference between the wet bulb and dry bulb thermometers was $23\frac{1}{2}^{\circ}$ from 12 A. M. to 2 P. M., which shows an excessively dry climate. We also observed that a strong wind sprang up about mid-day from the eastward, which blew for two or three hours daily, raising the finely pulverized dust in clouds, which we found very annoying in this almost treeless country. At Râni ki kothi however there were numerous gooseberry bushes, and on the slopes of the hill above there were several clumps of the pencil cedar (*Juniperies excelsus*) which is called *Shûr* by the Lâhulis and Shupa or Shupka by the Ladâkis and Bhotis.

Monday, 31st August. To Kârdang on the Bhâga river, 10 miles. Road to Gantâl at the junction of the Chandra and Bhâga rivers not so bad as in 1839, but still dangerous in parts from landslips. The

bed of the Chandra is here exceedingly narrow ; and the mountains are bare, bleak and wild, and blasted, as if freshly risen from the innermost and fiery depths of the earth. The limestone strata on the left bank are very much contorted. From Gantál to Kârdang, 4 miles, the road was at first very bad, with a steep descent, and a still steeper ascent over almost perpendicular landslips. The rest of the road was very fair. The country improves on approaching Kârdang ; and the view of the Bhâga valley, with the high picturesque-looking houses in the village of Kârdang, situated on a commanding point, is really beautiful for this desolate district. There are numbers of trees too around the village, especially pollard, willows and pencil cedars, with numerous gooseberry and rose bushes.

Tuesday, 1st September. To Kolang, 13 miles. A large village with temple. Road, for 3 miles, along the left bank of the Bhâga river, bad : but it could be easily made into a very good one. Crossed the Bhâga by a *Sanga*, or spar bridge of 38 feet span, and 40 feet above the stream, having a roadway 4 feet broad of split spars without a hand-rail. At this point the river is confined in a narrow chasm of only 30 feet in width, between siliceous rocks, in which the waters forever rush and rave impetuously and frantically from side to side. From the bridge there is a steep ascent to Goomring : thence the road lay for 3 miles amidst cultivation along the edge of the bank and about 600 feet above the river. For three miles more the road ran through a thin forest of pencil cedars and along the edge of very steep rocky cliffs—then again over rough, stony, and barren ground for 5 or 6 miles to Kolang. Throughout this march the road was bad. The hills on the opposite bank of the Bhâga look barren and hideous, and scathed as if with fire—with bare and frightful precipices, so steep that even the snow cannot rest upon them. But high above all these rise the majestic snowy peaks of Rúnkánta and Tinú, the latter named from a village at the foot of the hill, *khRún-kánta*, the “avalanche-peak,” is a remarkable looking cone of snow which may be seen from Súltanpúr.

Wednesday, 2nd September. To Dárga, 10 miles. A rapid, steep, zig-zaggy descent from Kolang, amidst granite boulders, to the bed of the Bhâga. Thence a tolerably level road along the river's edge, among stones, and over grassy ground for about 4 miles to Jaspa, a pretty looking village with plenty of trees about it. From Jaspa the

road for the first mile and a half was good, then alternately over loose stones and rocks to the bed of the Zanskár river, up which it ascends for nearly a mile to the Sanga or spar bridge,—which consists of 2 spars of 58 feet span raised 12 feet above the stream, with a roadway of split spars, and no hand-rail. The Zanskár river is a considerable stream, apparently as large as the Bhâga. Immediately opposite the Bhâga is joined by another large stream, the Milang. From the bridge the road follows the Zanskár river for about a mile to Darcha, a small, poor, desolate-looking place, completely bare of trees, excepting only five stunted pollard willows. From this place there is a tolerably good horse road up the Zanskár nullah into the district of Zanskar. Moorcroft's decaying and dangerous hill, to avoid which he was obliged to cross over to the Milang side of the river, is now quiescent, and the high road runs over the débris at the foot of it.

During our stay in the Láhul district the thermometer ranged between 40° and 50° at sunrise, and rose to between 70° and 80° at mid-day.

Thursday, 3rd September. To Shungnung or Chungnung, a mere halting place, 5 miles. Road for the first mile and a half a tedious ascent; then continuous rough and stony ascents and descents. No firewood at this place: the coolies used sheep's dung, with which the ground was covered in all directions.

Friday, 4th September. To Kitpobrang, another halting ground, $8\frac{3}{4}$ miles. Road slight ascents and descents for $2\frac{1}{2}$ miles to Dojâm; a level spot used by the shepherds and traders as an encamping ground, then stony for $1\frac{1}{4}$ mile to Patseo, where we crossed the Bhâga river. This bridge is dignified with the name of Patseo (or the stone bridge) merely because the roadway is formed of slates instead of the usual split spars. It is thrown across the stream at a very narrow point, where a large rock confines the waters within a space of 6 or 7 feet, the whole length of the bridge being only 12 feet. Thence for two miles the road is level and stony to the junction of a large stream which comes from the north. Beyond this the road turns sharply to the eastward up the left bank of the Bhâga for 3 miles to Kitpotrang; height 13,400 feet; country very stony, but covered with numerous strawberry plants. The hills still bare, steep, and seathed, as if with fire.

Saturday, 5th September. To the Yunam lake, 13 miles. Road for 5 miles good, but very stony; with a gentle ascent to Mongpa (or Mápú) a level halting place at the foot of the Bára Lácha Pass. From this point we crossed the Bhága on a solid mass of snow, which stretched right across the river, and beneath which the stream rushed along impetuously. In A. D. 1820 Moorcroft saw a mass of snow across the river in this very spot. Beyond this the road was a gentle ascent for 4 miles to the Suraj Dul, or lake, which is a small oblong sheet of clear green water hemmed in at its western end by the debris of rocks fallen from above, about one quarter of a mile long, and half as broad. The water finds its way out of the lake unscen through this mass of disintegrated rocks. From thence the road was for nearly a mile almost level, along the dry bed of the lake, and then a short but steep ascent to the top of the Pass. From the total absence of snow this year the source of the Bhága was traceable to a ridge to the eastward of the Pass, somewhat more than a mile above the lake. This is the true source of the Bhága river; for the Chandra rises on the opposite side of the ridge.

We were particularly fortunate in the mildness of the season which had melted every trace of snow on the Pass. It is remarkable that we crossed the Bára-Lácha on the anniversary of the day on which Moorcroft had crossed it twenty-six years before us. He found the snow "lying in vast undisturbed masses," on all the great slopes and crests of the chain. Bára-Lácha, or as it is often called, Bára-Lách, means the "middle pass," it being the middle one of the three great passes on the high road from Ladák to Kulu and Mundi; the others being the Langa-Lách and the Kotáng.

At mid-day the temperature in the shade was 55°, and the boiling point of water by an excellent thermometer by Dollond, was 183·5°, which, following Prinsep's tables, would give a height of 16,276 feet, or 224 feet too low, the actual height having been correctly ascertained on two separate occasions by Moorcroft and Gerard, from barometrical measurements, to be 16,500 feet. In 1839 a capital thermometer belonging to Capt. Broome made the height to be 16,332 feet, or 168 feet too low.

The summit of the Pass is almost level for about half a mile. Each of the prominent parts is crowned by a pile of stones covered with

votive pieces of rag, and horns which are dedicated to Gépan. From the Pass the road descended along the side of the hill to the bed of the Yunam river, which rises to the south-east near the sources of the Chandra and the Bhâga. It then continued along the left bank of the Yunam for about 3 miles to the Yunam lake, a large sheet of water, 1000 yards long by 500 yards in breadth. It must have been formerly more than twice this size, and it is probably much larger even in the present day during July and August, when the snows are melted by the mid-day sun. When Moorcroft saw it, it was clear :—but we found it tinged with the pale ochrous clay which is washed into it by a small stream on the left bank of the river immediately above the lake. The dry bed is an extensive sheet of small stones, below which the water may be distinctly heard trickling towards the lake. On the 28th of September, when I returned by the same road, I found that the lake had shrank to about three-fourths of its former size, its level having fallen 3 or 4 feet, leaving the eastern side quite dry. The water was much clearer than before, which was most probably owing to the greater coldness of the season which had arrested the melting of the snow, and stopped the supply of water which formerly washed down the pale ochrous clay into the lake. Moorcroft remarks of the lake that “not a weed deformed nor a wave ruffled its pellucid and tranquil waters, there seemed to be no fish in it, nor was any bird nor even a fly in its vicinity.” The same solitude and utter desolation of the scenery around the lake was remarked by ourselves, and suggested the following lines, which are descriptive of the place :—

On Yunam's still and yellow lake

No living thing is seen :

Along its bleak and rocky shore

There is no smiling green.

The scathed hills rise on all sides

As bare as at their birth,

When by tremendous force upthrust

Fresh from the depths of earth.

No joyous bird on early wing

Beholds the morning break ;

But winter's stern and chilly eye

Frowns o'er the checrless lake.

Eternal silence reigneth there
Upon his snow-girt throne ;
And the unsyllabled dull air
Sleeps echoless and lone.

The dreary stillness that pervades
Earth, air, and all around,
Appals the heart ; and social man
Longs for some cheering sound.

The traders with their laden sheep
Who pass by Yunam's shore,
Leave not their foot-prints on its stones,
All desolate as before.

Yet to the simple shepherd's mind
The place doth not seem lone,
For every hill and mountain Pass
Hath Spirits of its own.

But Gépan chiefly wins their love !
To him square piles they rear,
Upon each Pass ; with votive flags
And horns of the wild deer.

Sunday, 6th September. Road at first along the edge of the lake : then over three sharp ridges of confusedly heaped up and angular blocks of ferruginous sandstone, down to the bed of the Yunam river. Moorcroft was informed, and appears to have believed, that this "scene of fantastic ruin," as he calls it, was the effect of an earthquake. Indeed no other cause with which we are at present acquainted could produce such mighty and extensive effects. Just below these ridges we saw the ruins of a former bridge, of which only two pieces of timber were now left, which, as fuel was scarce, we carried on with us to cook our food. Indeed, since leaving Darcha our only fuel has been the low, short, dry furze bushes, which with some coarse grasses, appear to be the only herbage of these dreary and uninhabited regions. Along the bed of the river we noticed, what had before attracted the attention of Moorcroft, the numerous and curious isolated hillocks composed of angular masses and fragments of rock. As far as our observation extended they always occurred in the midst of the alluvial flats : they could not therefore have been formed by accumulated stones which had rolled from

the mountains on both sides, for the mountains were too distant; besides which these hillocks were composed of angular fragments and not of boulders, which had been rounded in rolling from the action of water. They are most probably, as suggested by Moorcroft, "the harder fragments of a mass, from which the softer portions, the clay and sand, have been removed by gradual decomposition." Here we crossed the river, which was knee-deep and rapid, to Kelang, a shepherd's station, in a sheltered level spot. Large blue hares were numerous on these alluvial flats. They live under the stones in holes scooped out of the clayey sand. The herbage, though scanty, and dry, was eagerly eaten by the cattle. The neighbouring hills were of a reddish brown and pale ochrous colour, tinged here and there with slight patches of olive green and yellow grass. They were generally very low, the nearest not being more than 1000 feet above the river, and the more distant ones, which were more or less covered with snow, did not appear to rise higher than about 3000 feet above the river. We halted on a level spot without name, 14,600 feet above the sea, and $6\frac{1}{4}$ miles from the Yuuam lake. In this distance the fall has been only 680 feet, or little more than 100 feet per mile, which is a very gentle fall for a mountain stream.

Monday, 7th September. To mouth of Cherpa river— $6\frac{1}{4}$ miles. Road good, over a long level alluvial plain, in the midst of which was a square block of mica slate thickly imbedded with large crystals of quartz. This stone, which is 8 feet square and 12 feet high above the ground, is called *Lingti* by the people of Kulu, according to Moorcroft, and *Phálangdanda*, by the Ladákis. The only name that we could learn was *Phálang-danda*, which means the "boundary stone," the stone being a well known boundary mark between the states of Kulu and Ladák.

Beyond this the road continued over the plain, which became gradually narrower to the bank of the Ser-chu, or Ser rivulet, a stream coming from the S. S. E., of which the source is 10 miles distant. A footpath was visible up its right bank, and the remains of a custom-house on a commanding point looking up the Ser valley, shows that this footpath was formerly used by the smugglers of shawl wool, and probably of borax. Just above the Ser, the Lingti, a large river from the S. W. joins the Yunam on its left bank. The road beyond the Ser laid over a dusty plain to the junction of the Cherpa or Cherep

river, which comes from the E. S. E. about 25 miles. It is a large stream, apparently of as great a volume as the united Yunam and Lingti rivers.

We halted at this junction after a march of only $6\frac{1}{4}$ miles ; height above the sea 14,210 feet, which shows a fall of 401 feet, or about 65 feet per mile in a straight course.

On the left bank of the Yunam, below the junction of the Lingti, the ferruginous strata of sandstone are contorted in the most confused manner. There are caves high up in the rock, but apparently of no great extent. In the beds of the Ser and the Cherpa rivers, the banks are formed of a coarse sandstone grit dipping towards the north at an angle of about 30° . The water of the Yunam river is a clear green, most probably from having been filtered through the Yunam lake ; that of the Cherpa is grey, a hue derived from the melting of dirty snow.

As there was a well trodden footpath up the left bank of the Cherpa, and as the Láhulis, who were with us, stoutly denied all knowledge of it, it seemed certain that this must be one of the principal routes used by the smugglers of shawl wool between Rodok and Láhul. As we could obtain no information regarding this route, we determined to dispatch a trustworthy party up the Cherpa, who should rejoin us at the Chumureri lake ; as we had little doubt that this route would lead upon the southern end of the lake. On their return the party reported that they had found a bridge 5 miles above the junction, and that the pathway was perfectly practicable even for laden animals, with the exception of an extensive landslip near the head of the Cherpa river. Several traders' or shepherds' encampments were noticed on this route, where both grass and fuel were procurable in the neighbourhood of the river. They described the Pass at the head of the Cherpa river as being so easy that with a little labour it might be readily made into a very good one. From thence after a short descent the route ran over stony alluvial flats along one of the feeders of the Para river, and over a low Pass to the southern end of Chumureri lake, as we had anticipated. The object of the smugglers would appear to have been to reach the Láhul boundary as near the Phálang-danda (or boundary stone) as possible, by some unfrequented route. A glance at the map will show at once that this route leads directly from the shawl countries of Rodok and Gardok viâ Hánli and

the Pará and Cherpa rivers to the Láhul boundary at the Phálang-danda: for the route by the Serchu is only an offshoot of that by the Cherpa. Were this route to be opened by the British Government, and a few Dhurmsálas, or travellers' houses, built at convenient distances, our traders in shawl wool from Noorpoor and Rampoor would be saved the heavy duties which are now levied by Maharaja Guláb Singh. One of these Dhurmsalas would cost about 200 Rupees: and eight or ten of them would be sufficient along the whole line of uninhabited country from Dárchá to Hánli. The most eligible positions, combining easy distances with the indispensable requisites of fuel, grass, and water, are shown in the map,* and the proposed Dhurmsálas are numbered from Dárchá eastwards and marked D. Our traders would thus be able to obtain their shawl wool direct from the Chinese districts of Rodok and Gardok, by a route through our own territory.

From the information which we received, and from the view of the country which Mr. Agnew obtained from the Lanka peak, the Cherpa is formed of two large branches, of which the general bearings were taken by Mr. Agnew. The northern branch leads up to one of the sources of the Para, and the southern branch leads directly upon the head of the Losar river, a fact which did not escape the researches of the accurate Moorcroft, who remarks, (I. p. 265,) "Beyond the Ladak boundary, it (the Losar) is said to meet with the Tsurip (Cherep or Cherpa) from the north."

Almost due east from the junction of the Cherpa and Yunam rivers, there is on the top of the hill, a remarkable square rock, which has so much resemblance to a Fort that it had received the name of Lauka from the shepherds and traders who frequent these parts. It is a well known point, and it can be seen from the Langa-Lách Pass, as well as from the neighbourhood of the Yunám lake. Mr. Agnew succeeded in scaling this height with some difficulty, at 4 p. m. he found the thermometer at 44° and the boiling point 181°, which after correction gives a height of 17,513 feet above the sea, or 3,300 feet above the alluvial flat at the junction of the Cherpa and Yunam rivers. The thermometer fell to 18° during the night.

Tuesday, 8th September. To Gadéra 6½ miles, crossed the Cherpa at 10½ A.M. the river rising fast from the melting of the snow. The

* This map will accompany another article by Capt. C. in our next number.—EDS.



A lemmingham delt.

stream was 100 feet broad, rapid, and strong and mid-thigh deep ; and the crossing was effected with some difficulty. In the latter months of July and August the Cherpa is not fordable except early in the morning, and the traders who reach its banks too late for fording are obliged either to halt until the next morning, or to go round by the bridge, which is 5 miles higher up the stream.

The road from the Cherpa was alternately over stony plains, and shingly slips from the rocks above. Just before approaching Godéra the plain is a succession of levels gradually becoming lower and narrower in size, and showing clearly the extent of a former lake at different periods, until the rocky obstacle, at a point about four miles below Gadéra, was burst through altogether and the lake completely drained. The height of Gadéra above the sea is 13,949 feet, which gives a fall from the junction of the Cherpa river of 261 feet in a distance of $6\frac{1}{2}$ miles ; or just 40 feet per mile. At some former period it is clear that the bed of the Yunám river must have been a long narrow lake, the extent of which is shown in the map by a shade of brown confined between dotted lines.

The hills on each bank consist of hard siliceous rocks ; and the alluvial flats are formed of siliceous pebbles of all sizes strongly cemented together. Along the banks of the river we observed numerous rude pillars of this hard conglomerated gravel, which were generally crowned by stones of different sizes. In the bed of the Chánû nullah, near Godéra, and on the northern bank, there are two of these remarkable natural columns about 30 feet high, with their stone capitals ; one a very large block, and the other a much smaller stone, which appears to be balanced upon a point. These are the identical "insulated columns of pebbly conglomerate," described by Moorcroft in A. D. 1820, "on the summit of one of which," he says, "rested a block of stone many tons in weight, and upon the top of the other stood a smaller block nearly on a point." On my return I stopped at Godéra for breakfast, when I made the accompanying sketch of these remarkable pillars, (Pl. XXIV.) which prove both the extreme dryness of the climate and the minute fidelity of Moorcroft's descriptions. I fired a ball at the smaller stone, which is not more than 2 feet thick and apparently balanced on a point, but though the ball hit it right in the centre, the shock had no effect whatever. In a moist climate these pillars would not stand for a single

season; whereas we have, from Moorcroft's faithful description, the most satisfactory proof that they have existed exactly in their present state for the last six and twenty years. The larger one of these capital stones appeared to me from a rough calculation to be between 6 and 8 tons in weight.

Wednesday, 9th September. To Demra, 4 miles. Road for three quarters of a mile to the northward along the right bank of the Yunám river. We then ascended by a very steep zigzaggy path up the face of the hill to the eastward, until we reached the bank of the Chânú nullah. From this the path alternately ascended and descended over spurs of the hills on the right bank of the stream to Demra, a halting-place, where fuel and water are procurable.

Thursday, 10th September. To Gangá Anáj, 10 miles. Road from Demra, at first undulating, then a steep ascent for about 500 feet, after which a very rapid descent to the bed of the nullah at a level spot called Súmdo [the three streams, from *Sum*, three] where three small streams join their waters. From this point there was a long ascent for about 4 miles to the top of the Langa-Lách Pass, 16,043 feet above the sea. The Pass was crowned as usual by a pile of stones covered with bits of cloth, and dedicated to Gépan. From the Pass there was an easy descent for nearly six miles along the left bank of a nameless nullah, chiefly over steep, gravelly slips. Road stony and very narrow. The nullah is a mere ravine between siliceous rocks which rise from 1500 to 2000 feet above the bed of the stream.

At Gangá Anáj, where we halted, the bluish grey siliceous cliffs from 800 to 1000 feet in height, stand almost perpendicularly facing each other at a distance of only 120 yards apart at base, as shown in the sketch. The whole way down to this point the sides of the ravine are of a gravelly conglomerate lying in horizontal strata composed of fragments of all sizes, from several tons in weight to the smallest grains of the same bluish grey siliceous rock, cemented firmly together by some siliceous matter more or less mixed with clay. As the fall from the top of the Pass to this point is only 491 feet, and the cliffs are nearly 1000 feet in height, it seems almost certain that the ravine was once blocked up at this point, and that a long lake formerly existed there, in which this gravelly conglomerate was deposited in sediment, as it is composed of fragments of the rocks on each side.

Immediately above this point there is a high conglomerate cliff; and the ravine is even now closed to a height of 400 or 500 feet, by a confused mass of enormous blocks, both of the siliceous rock and of the conglomerate; but chiefly of the former; and the stream finds its way unseen beneath this mass of rubbish. This must have been the place where Moorcroft noticed an isolated rock more than 300 feet high so much undermined that it threatened to fall "at no distant period." As there is now no rock answering this description, it must have fallen down not long ago. Immediately below this point however, there still exists the pathway, which runs as described by Moorcroft, for about ten yards between a detached pillar on the edge of the stream and the solid rock, and is only sufficiently wide for the passage of a man on horseback. It is on the right bank of the stream between a conglomerate mass and the cliff.

Friday, 11th September. To Pángtik, $5\frac{1}{2}$ miles. At two miles below Gangá Anáj clay slate first makes its appearance, contorted and twisted and broken in the most inextricable confusion and overlaid with gravelly conglomerate. Nothing short of the power of a mighty earthquake could have caused such extensive and complete disjointment. The strata appear as if they had been lifted to some considerable height and then suddenly let fall, which broke them up into small fragments, standing and lying at all angles. Beyond this point the road continues along the left bank of the nullah for half a mile to Ruptang, a shepherd's station, where it crosses to the right bank and follows the stream for a quarter of a mile farther to its junction with a second stream coming from the S. E. On crossing the latter stream, there is an open level spot of ground called Thoga Chokpo, which, from the numerous fire-places, is apparently a favorite halting-place with the traders. Just beyond this a third rivulet, also from the S. E. joins the others, and the united streams are called Súm-khel, or the three springs. Passing up the bed of the last stream for two miles we halted at an extensive level spot called Pángtik on its left bank; we were obliged to halt here as the nearest water on our road was still 10 miles distant.

On looking up the stream to the S. E. from Pángtik, the valley appeared to be so broad and open and the hills so low that we felt assured there must be an easy route open towards the Chumureri lake. A party was accordingly dispatched to ascertain this point. They

afterwards met us near the lake, and described the road up the Súmkhel as stony, but easily passable even for ponies. The pass appeared to them more like a gradual rise of the whole country than a ridge separating two valleys; after crossing which the road continued along the bank of a small stream which joins the lake at its southern end from the westward.

Saturday, 12th September. To Moré-cho (the Moré pond) a pool of fresh water, distance 10 miles and 1 furlong. Road at first a very steep ascent from the bed of the river for about half a mile, and thence level along the plain of Kyung, running nearly due north for six miles, and then N. E. for 4 miles to the Moré-cho, a pool of fresh water not more than 300 feet in circumference. On the 25th of September, when I re-passed this spot, the pool was quite dry. The plain of Kyung is from one to two miles in breadth, with a long bed of white sand to the S. W. of the Moré-cho:—the rest of the plain is but scantily covered with furze and grass.

This plain has evidently once been the bed of a long lake, the extent of which is shown in the map by a brown shade included between dotted lines. The point where the waters eventually burst through must have been just below Thoga Chokpo, at the junction of the three streams. The hills on the eastward are entirely of mica slate.

Sunday, 13th September. To Rúkchín, an encampment of Nomad Tartars, living in black hair tents; 7 miles, and 1 furlong. The road continued to the N. E. along the level plain of Kyung, which gradually diminished to half a mile in breadth. At 6 miles reached Rúkchú, an old station of the Nomads, where Moorcroft halted two days. One mile further turning up a ravine to the westward, we reached the Rukchin encampment, consisting of ten or twelve black hair tents, each containing 4 or 5 people.

These Nomads appear to be a happy race, who being satisfied with little, have but few wants. They are called Kampás (the Champas) of Trebeck. The men usually wear woollen great coats reaching below the knee. As they are never washed, but often darned and patched, these great coats are mostly rather tattered looking garments of many colors. They wear leggings also, generally of thick coloured woollen, which is put round the leg like a bandage and secured by a lough garter, usually of black woollen rope, which is wound spirally round the leg



from the ankle to the knee. Their short boots are made of goatskin or sheepskin, with the hair or wool turned inwards, and well stuffed with wool, which while it makes them warm to the wearer gives rather a clumsy appearance to his feet. The cap is generally a piece of goatskin with the hair inwards, or else a woollen one edged with skin or coarse red silk. The women go bare headed, but they wear lappets round the cheeks, and over the forehead, from which a broad band well studded with large flat badly-flawed turquoises and cornelians, passed over the head gradually narrowing until it reaches the waist behind. The hair is dressed in numerous thin plaits, which hang behind and over the shoulders, forming a complete fringe or rather a sort of well greased mane to the head and neck. They frequently wear long great coats and leggings like the men; but I have seen them also dressed in three or four thick woollen petticoats, and a sheepskin jacket with the wool turned inwards over the coat. The men also wear these sheepskin jackets when they feel cold: and their tents are well supplied with them, as both sexes put them on when they go to rest.

The men are generally from 5 feet to $5\frac{1}{4}$ feet in height, and the women from $4\frac{3}{4}$ to 5 feet. Yet they are hardy and even strong. I have often seen the roof of my tent, which was wadded with cotton, carried throughout a whole march by one of these diminutive women; although the taller and finer-looking men of Simla declared it to be too heavy for one of them to carry. These Nomads are generally of a deep brown complexion; the girls are however rather fairer, and some of them have colour in their cheeks. They all have the small eyes of the Tartar races, and to use the words of an old traveller, they are "a square, stout, strong people having platter faces and flat noses." Their ears are particularly large, and many of them wear ear-rings. Both men and women carry about them all their property excepting some wooden pails for milk and the few large iron pans which they have for cooking their food.—Knives and spoons, pipes and tobacco pouches, flint and steel, and a small cup, either of iron, brass, or wood, are carried by every one. These are usually crammed inside the great coat above the waist, where also may be found a long piece of woollen rope for fastening packages, and occasionally a single or double flageolet, either of wood or brass.

Their cattle consist of herds of Yáks, or Grunting oxen, with the

long bushy tails, and droves of sheep and goats. The hair of the Yáks is cut every summer, and woven into the coarse cloth of which they make their tents. During the winter they live in the valley of the Indus: in the summer they move to any places where they can find grass, water, and fuel. They exchange their wool with the traders for wheat, flour, tobacco, and any thing else that they may require.

Tuesday, 15th September. To the bank of the Chokhar, or "Salt lake," distance 6 miles. The road lay towards the S. E. over a low pass with an easy ascent, but a steep and bad descent. The rock here changed from mica slate to gneiss. We halted near a small religious building on the southern end of the salt lake, which is about five miles long by three miles broad, and which was covered with thousands of wild ducks and wild geese. The water of the lake is salt and bitter, and the whole shore is covered with white banks of the saline efflorescence. Height above the sea 14,961 feet. The thermometer fell to 9° during the night. There are on all sides the clearest marks of the former higher level of this lake about 60 feet above the present surface of the water. The former extent is shown in the map by a brown shade surrounded by a dotted line.

Wednesday, 16th September. Marched 10 miles to a nameless halting place to the north of the Nakpo Gonding Pass. Road at first due east, along the southern shore of the salt lake for 4 miles; it then crosses the stream of fresh water 10 feet broad flowing from a small fresh water lake to the south. Thence for 2 miles alternately over sandy flats, and hard caked sheets of saline efflorescence. Beyond this it lies due east for four miles over slightly undulating and very stony ground along the bank of a dry nullah, in which a few puddles of melted snow water occurred at our halting-place. The large blue hares are very common at the foot of the hills on both sides of this nullah. They have enormously long ears; and live under the stones. I shot half a dozen in half an hour on my return at this very spot.

Thursday, 17th September. To the foot of the Nakpo Gonding Pass, distance $9\frac{1}{2}$ miles. Road for the first four miles a very gradual ascent to the crest of the Poldong or Pulakonka Pass. Beyond this, at a mile and a half, we crossed the deep bed of a nullah coming from the S. W. source about 10 miles distant: thence for 4 miles the road continued to ascend over stony spurs; passing a small stream which

comes also from the S. W. The spray of this stream was frozen in icicles over the boulders. We encamped just below the Pass at a halting-ground called Nakpo Gonding. Snow fell at mid-day and continued falling for two hours. Height above the sea, 16,225 feet.

Friday, 18th September. To Beldong near the northern end of the Chumureri lake, distance 12 miles, and half a furlong. Road at first a gradual ascent, then a descent, and a second ascent to the crest of the Nakpo Gonding Pass. Total ascent about 800 feet, and height of Pass 17,000 feet above the sea.

A few hundred feet below the Pass, on a level plain, I saw a single Kiang or wild horse; and by sending men to the right and left I was enabled to approach within 200 yards of the animal. The Kiang then moved off and I followed, and when he turned to look at me I stood still, and followed him again as he moved. After repeating this three different times I got within about 180 yards of him, and taking a steady aim, I struck him six inches behind the shoulder, the ball passing clean through him and striking the ground beyond. The animal then scampered off for about 200 yards reeled round, and fell over heavily to the ground. When I came up to him he was quite dead. The ball had passed through his heart—a lucky shot for a fowling piece at 180 yards. This animal, which is the *Equus Hemionus* of Pallas, and the *Equus Kiang* of Moorcroft, is very common about this part of the country.

From the top of the Pass the road was an easy descent for $4\frac{1}{2}$ miles to Lámzung, a halting-place on a small clear stream which feeds a salt lake lying to the eastward about 2 miles. This lake escaped the notice both of Trebeck and of Gerard, although it is about 3 miles long by $1\frac{1}{2}$ mile broad. It is called Chokhar, or the salt lake, and the salt is seen in sparkling crystals all around its edge. The people say it has no outlet, which will account for its saltiness. It has several feeders on the eastern side, besides one on the northern side.

From Lámzung a slightly undulating road for about a mile led to the Chakshang rivulet which comes from the snow to the westward and turning sharply to the southward flows into the Chumureri lake,—of which it is the principal feeder at its Northern end. A slight ascent from the Chaksang led over a low point, and the road then descended

to the rivulet again, and followed its right bank for about 5 miles to a level spot called Beldong, where we halted.

Saturday, 19th September. Marched $6\frac{1}{2}$ miles to a halting-place on the bank of the Chumureri. Road for first $2\frac{1}{2}$ miles very sandy as far as the lake. At 2 miles further passed the Korzo Gúnpa, or monastery, inhabited by one Lama, who resides there throughout the year. He rears some barley and turnips on the banks of the Korzo rivulet close to the lake, at an elevation of 15,000 feet above the sea. The barley had just been cut when we arrived there. It was still quite green ; but there was every appearance of snow, and the Lama was afraid of losing his crop altogether. The barley looked strong and healthy but the turnips were very small and hard. The Láma informed me that even in the depth of winter the snow does not lie more than knee-deep near the monastery, a point which I am disposed to believe from what I myself beheld on the two following days ; namely, that although it snowed heavily for a whole day and night at the southern end of the lake, where the snow was a foot deep ; yet at the northern end near the monastery there was not even a trace of snow. This phenomenon would appear to be due to the following cause. The vast clouds which are formed on the plains of India are drifted northwards by the monsoon until arrested by the loftiest ranges of the Himálaya. The last of these mighty chains towards Ladák is that in which the Páraug Pass is situated ; and here the clouds discharge their contents. Beyond this lies the dry and desert country of Ladák, where water is so scarce as not to afford sufficient moisture for the formation of any extensive clouds, which will account for the little snow that falls to the northward of these great ranges.

At mid-day I placed a mark in the water to ascertain if possible whether there was any rise and fall in the level of the lake ; but up to 6 o'clock in the evening and again in the morning at 6 o'clock I did not observe any perceptible change. The water of the lake was sweet to my taste, but the people of the country although they call it sweet, prefer for their own drinking that of the small snow streams which flow into the lake. Both of these facts would show that there must be an outlet to the lake.—If so, it must be at its south-eastern end, as laid down by Trebeek, for I examined all the rest of the lake carefully ; and had I not on the following day been obliged to return in conse-

quence of heavy snow, I should have examined the south-eastern quarter also to ascertain whether there was any visible outlet to the lake. Were there no outlet, the water would be salt as in the other lakes; and there would certainly be considerable rise in its level during the day from the melting of the snow, and a corresponding fall at night. Dr. Gerard however declares that "whilst it is fed by several considerable streams, it has no efflux, and is kept at its level entirely by evaporation." I cannot agree with this opinion, for it appears to me that the greater the evaporation the more salt should be the water, which is not the case, as it tasted sweet to me, and Trebeck found it only brackish. The lake is 15 miles in length and from 2 to 3 miles in breadth. The water is beautifully limpid, and of a deep blue colour. I saw but few wild geese upon the lake. The mountains on both sides were perfectly bare excepting near their summits, where there were some patches of snow; they do not appear to rise more than 3000 feet above the level of the lake.

Sunday, 20th September. Marched 10 miles and 7 furlongs to the southern end of the lake, to the bank of a small stream which joins it from the west. It began to snow about 7 o'clock, and continued snowing the whole day and night. In the morning the snow was a foot deep on the ground, and six inches thick on the roof of my tent. As the coolies positively refused to proceed any further, we were obliged to yield to them, and to make arrangements for retracing our steps. Accordingly on

Monday, 21st September, we marched to Korzo Gungpa, 13 miles over the snow: from which place I returned by the route already described, excepting that instead of visiting Rukchin, I went straight from the Chokhar, or great salt lake, to the Moré-cho; crossing the Sápokong Pass, and halting at a shepherd's station, called Tákzûm, where I shot several hares.

On the 26th I joined Lord Elphinstone and Major Bates and marched in company with them to Simla. We crossed the Bára-Lácha Pass on the 28th of September, where it was still free from snow. On the 5th of October we crossed the Rotang Pass, on which we found fresh snow from a foot to a foot and a half in depth; and we were just in time, for the people assured us that the Pass would be com-

pletely closed by the 5th of October. The remainder of the journey has already been described.

It may be observed that the whole of the country from Dáicha in Lâhul to the Chumurcri lake, is a vast uninhabited desert, without a single tree, or even a bush knee high, and but scantily supplied with water.

In conclusion I will only notice the strange belief of the Gerards that the snowy peaks to the north eastward of Piti and Lâhul exceeded in height all that they had seen of the Himâlayas. The Baron Humboldt (Kosmos, p. 45 n.) calls it an unfounded surmise, in which opinion I cordially agree: and I believe that I am fully borne out by the observations of Moorcroft and Trebeck when crossing the Kandu La (Pass) 16,600 feet in height to the south-westward of La. Moorcroft remarked that "the mountains near at hand were not much more elevated than the ghât, except one at some distance *to the west*, the peak of which was lost in clouds." Again, when crossing the Changla Pass, 17,800 feet high to the south-eastward of La, he remarked that "as far as could be estimated by the eye the line of elevation of the loftiest ridges rarely exceeded this, with the exception of the mountain descried from the Pass of Kandu La." It is needless to multiply passages to the same effect. It is sufficient that neither to the south-westward, nor to the south-eastward of La, did Moorcroft, observe any peaks higher than 18,600 feet, excepting one far to the westward, which, on referring to Vigne's map, would appear to be the double-peaked mountain called Paja Huy and Dum Huy, situated in the great snowy range which divides the valley of the Chandrabhâga from that of the Indus.

MISCELLANEOUS.

1.—*Inundation of the Indus, taken from the lips of an-eye witness,*
A. D. 1842.

(Communicated by Capt. J. ABBOTT.)

Ushruff Khan, Zemindar of Torbaila, states:—"In the month of Poos (Dec.) the Indus was very low. In Maag and Phagoon (Jan. and Feb.) it was so low as to be fordable (an unprecedented phenomenon). In

Chayt it continued very low, but not fordable. In Bysakh (April) the same. About the middle of Jayt (May) 1st 1898, the atmosphere was one day observed to be very thick, the air still. At about 2 p. m. a murmuring sound was heard from the north-east amongst the mountains, which increased until it attracted universal attention, and we began to exclaim "what is this murmur? Is it the sound of cannon in the distance. Is Gundgurh* bellowing? Is it thunder?" Suddenly some one cried out, the "Rivers come!" And I looked and perceived that all the dry channels were already filled and that the river was racing down furiously in an absolute wall of mud, for it had not at all the colour or appearance of water. They who saw it in time easily escaped. They who did not, were inevitably lost. It was a horrible mess of foul water, carcasses of soldiers, peasants, war-steeds, camels, prostitutes, tents, mules, asses, trees and household furniture, in short, every item of existence jumbled together in one flood of ruin. For Raja Goolab Singh's army was encamped in the bed of the Indus at Koolaye, 3 koss above Torbaila, in cheek of Poynda Khan. Part of the force was at that moment in hot pursuit, or the ruin would have been wider. The rest ran, some to large trees which were all soon uprooted and borne away, others to rocks which were speedily buried beneath the waters. Only they escaped who took at once to the mountain side. About five hundred of these troops were at once swept to destruction. The mischief was immense. Hundreds of acres of arable land were lieked up and carried away by the waters. The whole of the Seesoo trees which adorned the river's banks: the famous Burgutt tree of many stems, time out of mind, the chosen bivouac of travellers, were all lost in an instant. The men in the trees, the horses and mules tethered to the stems, all sunk alike into the gulf and disappeared for

* Gundgurh is a singular ridge of argillaceous schist, permeated with veins of mica, and of sulphate of lime forming a wall about 1500 feet high almost parallel to the stream of the Indus on the eastern bank. In its cavern Raja Russaloo (the king Arthur of the Punjab) imprisoned the last of the Rakhus or giant race, having slain the others. He hung up his bow at the mouth of the cavern, so that whenever the huge monster attempted to escape this memento of his terrible victor sent him back roaring with terror to his den. Many natives assure me that 20 years ago they have often heard Gundgurh bellowing, but that the sounds have ceased since then. The mountain has no volcanic rocks or lavas: yet the admission of sound by this mountain is too well attested to admit of doubt.

ever. As a woman with a wet towel sweeps away a legion of ants, so the river blotted out the army of the Raja. There were two villages upon an island opposite Ghazi. One of the inhabitants was returning from Srikote, and descending the mountain. When he came within sight of the spot where he had left all he held dear, he naturally looked with affection toward his home. Nothing was visible but a wide rushing sea of mud. His house, his friends, his household, his village, the very island itself, had disappeared. He rubbed his eyes in mortal terror, distrusting his sight, hoping it was a dream. But it was a too horrible reality. He alone of all that busy hive of moving, struggling, hoping, fearing beings, was left upon the earth."

So far the Zemindar, and to this eloquent description of an eye-witness, I need only add, that it will take hundreds, if not thousands, of years to enable time to repair with its healing hand the mischief of that terrible hour. The revenue of Torbaila has in consequence dwindled from 20,000 to 5000 rupees. Chuch has been sown with barren sand. The timber for which the Indus had been celebrated from the days of Alexander until this disaster, are now so utterly gone, that I vainly strove throughout Huzara to procure a Seesoo tree for the repair of the Field Artillery carriages. To make some poor amends, the river sprinkled gold dust over the barren soil, so that the washings for several successive years were farmed at four times their ordinary rent. It is generally believed that the accumulation of the waters of the Indus was occasioned by a landslip which blocked up the valley; but this and other interesting questions we must leave for solution to Mr. Vans Agnew, whose late mission to Gilgit promises so much to the lovers of science."

2.—*Extract of a letter from Col. J. Low.*

Penang, Jan. 10th, 1884.

"I may mention that on a cursory glance at the alphabet which you have kindly copied for me, I find several letters which I think I shall be able to identify with others in the inscriptions here. I could not manage with ink, and at last took the rather tedious and toilsome process, of copying by rule and compass.

The first inscription which I found was so copied, and forwarded to the late Mr. J. Prinsep shortly before his lamented death, so that

it is probably amongst other inscriptions (unpublished), lying in your library.* He replied saying, he should like to have a facsimile, but I don't think any one could have been more correct than the one I sent. He however lithographed the inscription with the Khulsa, which is in the face of the stone, which was apparently formerly the top of a pillar. He said it was in the Sanskrit not Pali. The style of the letter nearly that of the Allahabad, No. 2. Is not that a transition Pāli? I have a copy on the other side of the water of the Journal containing *two Allahabad inscriptions*. But the last *inscription* which I discovered and copied about a year ago, is in a character somewhat older I presume. However, I have been floundering in the dark for want of the Journals containing the labours of Prinsep, Wathen, &c. &c. I will send you copies of both of these inscriptions; and, if I can manage it, of one upon a coin which I found a few months ago, but which our chief brāhman of the temple here cannot decypher. I have proved beyond doubt that there was a *Hindu* colony settled in Province Wellesley and Keddah, and I *think* it had been preceded by a Buddhist population. But I have not yet closed my researches, which have here to be conducted under many disadvantages (beyond our boundary), such as almost impervious jungles, a population who will afford no assistance whatever, and *Siamese jealousy*. I am engaged on and have nearly finished a paper for the Journal of the Indian Archipelago, on subjects relating more to our section of the globe than to India. But I have MSS. on my shelves, which I hope to be able to send, I will not promise very soon, to your Journal. I have been trying to get some Pali scholar, amongst the Buddhist priests, to assist me in explaining some MSS. in that language. But they are a sadly ignorant set, and even as regards their own Deity and his holy places, they are obliged to confess that I know more than they do, and that is not a great deal either.

I have little hope that the Archæological field of Sumatra will soon be laid open. It is a sealed book. We only now want to have a collection of all the ancient inscriptions extant to the eastward, to decide, on Prinsep's system, the various periods when Buddhists and Hindus migrated there. It seems to me at present that most if not all of these

* We fear not. We have searched diligently and found none but such as have been published.—Eds.

came from Orissa or Kalinga. I cannot get *Mr. Stirling's Orissa*. This and the deficient pages of the Journal will be highly acceptable when procureable."

3.—*Extract of a letter from Capt. KITTOE 22d March,*

"You express a wish to hear of my progress. I fear that I shall not this season be able to collect much, or add to the information already imparted; in the first place, the season is too far advanced; in the next, being entirely dependent on my own personal exertions in ferretting out curiosities, which is a work of time and chance, progress must of necessity be slow, particularly when I have so few hours daily available; however, I got two new inscriptions at Gaya, not of much moment, and paved the way for further works; many inscriptions are either buried in rubbish or built into walls; I had one taken out and placed in a conspicuous position. I wish authority could be used where persuasion failed, towards having every one thus restored to view; the expense would be very trifling, but the ignorant bigots fancy that we have some extortion in view, and are searching for money. This idea, though, appears to be vanishing. I have been for the past week engaged at Poonah and Koorkihar; at the former place I excavated round the Buddha temple, took a correct drawing of the very elaborate north doorway and of several idols, a sketch of the entire building and a ground plan. This occupied three days, together with sundry excursions in search of sculptures, &c. I was four days at Koorkihar, and have dug out and collected ten cart loads of idols, all Buddhist, and many of the Tantrika period; indeed I am inclined to think that they all belong to the period just before the decline of the sect. All the idols have the sentence, once or twice repeated, of "*Ye Dharma hetu probhava*, &c." and most of them have the name of the persons setting them up; two mention the country from whence they came; for instance, Jessur (? Jessore), and Malaya (? Mullye); one mentions the fact of the party having apostatized, and again returned to the worship of Shákya, in the 19th year of the reign of *Sri Mahendra Pal Deva*. This raja is also mentioned in one of my Gonerria inscriptions on a figure of Buddha also,—it is a name new to us; it does not occur in the Bengal list of Prinsep's tables. There are two blanks above Narrain Pal Deva, therefore he may have belonged to one of them. I at first

attached no importance to these short inscriptions ; I however fortunately copied several. I have been able to decide that Koorkihar must have been a place of Buddhist pilgrimage, and that there were rows after rows of Chaityas extending north and south for several hundred feet ; added to these, there were isolated buildings and tanks in every direction for a mile or more around. In some inscriptions the idol is called Buddha, Shákya in most, and in one, " Vir Viroehna." Some of the figures are very beautiful ; one of Maya Deví is as large as life, and most beautifully executed ; the arms however are missing ; there is one extremely curious and highly finished figure of a fat old gentleman, seated on a stool, holding an egg in one hand and a lizard in the other ; one arm and the head are wanting. I have made several drawings of figures that I could not remove. I hope by collecting representations of all the Hindu and Buddhist deities to be enabled to carry out my original intention of publishing a regular pantheon, which is much needed. I am now at Nowada, and proceed to-morrow night to Giryek, where I hope to find something worthy of notice. I have heard of two mounds near Behar, where there are numerous idols above and below ground. I shall visit Uffsan, where I went last year to see the inscription and the famous idol of Varaha, with the " Rishis resting on his bristles," as described in the Vishnu Puran (see Wilson's Translation). I fear I shall have to make but a short stay this time, as I am suffering much from the effects of the sun all last week, and unless I superintend, the people will either not work or injure the sculptures ; besides, it requires contrivance to get out such masses of heavy stone out of the pits they are buried in, without the help of lever, rope or more than 4 or 5 men. I manage it by the simple though tedious process of tilting from side to side and filling in bricks and rubbish at each turn, till they are fully above ground. When above ground, the next process is to turn the block flat over, taking care to place a lump of stones or a couple of bricks exactly under the centre ; this forms a fulcrum on which a child may move the largest stone, and by the same means of placing bricks under, it is set upright, and thus let backwards unto the cart.

I visited Tupobun. There are five hot springs, the hottest only 110° ; there have been a couple of temples, but nothing but a few broken idols and heaps of rubbish remain ; there is a modern Shiwalla."

4.—Daily rate of Evaporation in Calcutta.

On the chance of its proving serviceable to some speculator in meteorology, we place on record the subjoined statement of the daily rate of evaporation in Calcutta for the year 1845. The instrument employed was that described in Volume XIV. page 213 ; it was freely exposed in an open verandah to the influence of the atmosphere, sheltered, however, from the direct rays of the sun.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	0.49	0.22	0.75	0.71	0.60	0.76	0.29	0.32	0.15	0.74	0.50	0.55
2	.65	.42	.78	.62	.62	.62	.43	.33	.49	.82	.58	.56
3	.66	.50	.74	.46	.51	.43	.42	.38	.55	.81	.54	.60
4	.61	.54	.90	.43	.62	.53	.37	.36	.63	.73	.56	.54
5	.61	.55	.90	.31	.67	.46	.43	.35	.40	.62	.62	.50
6	.50	.84	.83	.43	.77	.54	.42	.36	.31	.43	.63	.43
7	.52	.93	.77	.53	.98	.63	.51	.22	.45	.52	.66	.51
8	.55	.90	.78	.56	.69	.55	.61	.20	.34	.54	.61	.23
9	.55	.84	.76	.66	.96	.47	.39	.26	.32	.68	.61	.76
10	.66	.82	.80	.30	.87	.51	.23	.21	.44	.77	.64	.53
11	.65	.74	.63	.51	.78	.34	.25	.21	.50	.75	.55	.50
12	.66	.76	.73	.60	.74	.48	.37	.30	.55	.45	.56	.58
13	.59	.83	.97	.60	.66	.49	.26	.17	.40	.42	.65	.62
14	.64	.84	1.00	.61	.81	.44	.23	.28	.23	.61	.64	.67
15	.51	.83	1.00	.56	.65	.54	.28	.19	.46	.58	.64	.53
16	.55	.86	1.05	.56	.64	.78	.34	.20	.42	.39	.56	.42
17	.37	.77	.73	.76	.64	.77	.40	.29	.54	.20	.57	.20
18	.43	.61	.72	.77	.66	.70	.37	.31	.39	.19	.56	.12
19	.43	.28	.85	.69	.93	.65	.29	.44	.47	.17	.64	.28
20	.55	.44	.96	.61	.94	.59	.35	.36	.52	.15	.52	.39
21	.62	.70	.96	.63	.77	.58	.38	.42	.47	.25	.50	.46
22	.45	.57	1.02	.85	.76	.46	.37	.35	.31	.46	.57	.40
23	.46	.76	.87	.77	.67	.48	.29	.38	.53	.30	.57	.38
24	.56	.70	.86	.78	.17	.46	.34	.43	.58	.46	.50	.52
25	.51	.71	.89	.82	.36	.21	.54	.43	.58	.47	.50	.51
26	.48	.81	.84	.45	.65	.21	.55	.44	.61	.30	.50	.46
27	.61	.80	.75	.48	.54	.40	.38	.44	.51	.58	.55	.44
28	.58	.89	.86	.77	.47	.31	.30	.28	.78	.52	.50	.40
29	.52	..	.88	.57	.38	.26	.24	.29	.63	.55	.42	.35
30	.31	..	.82	.66	.45	.19	.24	.33	.65	.68	.51	.59
31	.39	..	.85	..	.50	..	.24	.36	..	.52	..	.52
Ave- rage.	.537	.695	.714	.602	.650	.494	.358	3.15	.373	.515	.565	.468

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MARCH, 1848.

The usual monthly meeting of the Asiatic Society, was held on the evening of Wednesday, the 8th of March, 1848.

J. W. COLVILLE, Esq. President, in the chair.

The proceedings of the last meeting were read.

The accounts and vouchers for February were produced.

Dr. Falconer, B. M. S. and C. Huffnagle, Esq. M. D., Consul to the United States of America, having returned from Europe, were replaced on the list of subscribing members.

Charles Gubbins, Esq. C. S. was proposed for election as an ordinary member—proposed by Mr. Hume, seconded by Mr. Heatley.

Lieut. R. McLagan, B. E., Principal of the College of Civil Engineers at Roorki, was proposed by Dr. Falconer, seconded by H. M. Elliot, Esq.

Babu Ramaprasad Roy, and Raja Ramchand Singh, proposed by Mr. Laidlay, seconded by Dr. O'Shaughnessy.

Read a note from the Rev. Jas. Thomson, tendering his resignation as a member of the Society.

From Major Macleod, Madras N. I., to the same effect.

From Major Baker, B. E. withdrawing temporarily, on account of his leaving India on furlough.

From G. A. Bushby, Esq. Secretary to Government of India, Home Department, forwarding despatch from the Court of Directors, containing instructions for the guidance of the Thibet Mission.

Financial Department.—(Statistical.)

No. 37 of 1847.

Our Governor General of India in Council.

1.—You having determined to despatch a Mission to Thibet with a view to scientific as well as to other objects, we desire to direct your attention to the expediency of the opportunity being made available to the collection, as far as practicable of every species of information connected with the state, resources, and capabilities of the countries visited.

2nd.—It will be unnecessary that we should here enter into minute details as in our Despatch in this Department dated the 3rd June, No. 6 of 1846, we have given a general enumeration of the chief subjects of statistical inquiry, and prescribed rules for the guidance of those engaged in such inquiry within the territories under our administration. These rules and suggestions will be equally applicable to inquiries of the like nature prosecuted in other countries, and we wish them to be brought prominently to the notice of the members of the Mission.

3rd.—With regard to the collections in Natural History, we have given full general instructions in our Despatch in the Public Department, dated 16th, September, No. 17 of 1840. To this Despatch, and more especially to para. 8, we refer you for information on that point.

4th.—As it may be desirable that the members of the Mission should be apprized of the deficiencies of our Museum, in order if opportunity offers that they should be supplied, we forward in the packet a catalogue of Mammalia and birds of Nepaul and Thibet, underlined, so as to point out desiderata; together with an explanatory Memorandum relating to these and other branches of science.

We are, &c.

(Signed) H. St. George Tucker,

(Signed)

John Loch,

J. L. Lushington,

John C. Whiteman,

W. Wigram,

Wm. J. Eastwick,

Russel Ellice,

A. Shank,

John Cotton,

A. Galloway,

E. McNaghten,

W. H. C. Plowden,

Ross D. Mangles,

Henry Willock.

London, the 17th November, 1847.

MEMORANDUM,

With reference to the Mission to Thibet, attention should be called to the importance which the Court attach to the labours of the scientific department

of this mission. Although ample instructions have doubtless been given to the members of the Mission relative to all branches of science, which may present themselves for observation, it may be useful to enumerate a few points which have an immediate reference to the interests of the Museum of Natural History in this House.

The higher regions of Central Asia, and especially Thibet, possess a peculiar character with regard to their Zoological productions, and opportunities to examine and collect these have hitherto been extremely rare. Among the branches to which the particular attention of the Mission should be directed, are the Mammalia, Birds and Insects of Thibet, and the other elevated regions which may be visited by the Mission.

Of Mammalia, some species are known to be peculiar to the higher regions, or are rarely found in Bengal and the plains of India. The most important of these, so far as hitherto observed, are enumerated in the annexed list—"A Catalogue of Mammalia and Birds observed by B. H. Hodgson, Esq. in Nepaul and Thibet," in which the names of the species most desirable for the Museum are underlined is also sent for the assistance of the members of the Mission.

Of the Birds of Thibet and Central Asia, a general collection will be desirable, as they possess, as well as the Mammalia, a peculiar character, and most of them are as yet imperfectly known. Those birds however, which are also found in the lower regions of Bengal, should only be noticed in the Journals, as the collecting them would unnecessarily encumber the Mission.

The Pheasants of Thibet demand particular attention; many of them are of great beauty and rarity. Among these we notice especially the—

Crossoptilon auritum of Hodgson, and the

Thaumalia Amherstiae, and

Thaumalia Picta, which are enumerated in the 124th page of Hodgson's Catalogue.

All these are desiderata in the Muscum. and several specimens of each are wanted.

In this department also attention should be drawn to the species underlined in the accompanying Catalogue.

The opportunities which will be enjoyed by the Mission should be extended to the collection of the Insects of Thibet, and especially the Coleoptera and Lepidoptera, which are likewise of great interest, and as yet but little known, and it is strongly recommended that a competent Native Taxidermist may be attached to the mission for the especial purpose of collecting and preserving specimens of Natural History for the Museum.

List of Mammalia found in Thibet and the higher regions of Central Asia, which are desiderata in the East India Company's Museum.

- See Hodgson's Catalogue, p. 2 *Macacus* (Pithex) *pelops*, *Hodgs.*
 „ pp. 2, 3, 4 *Vespertilionidæ*; all the species of this family;
 „ „ *Family Felidæ*, all the smaller species.
 „ p. 5 *Felis Macrosceloides*, *Hodgs.*
 „ „ *Moormensis*, *Hodgs.* } especially.
 „ 6 *Leopardus eclidogaster*, *Temm.* }
 „ „ *Ellioti*, *Gray.* }
 „ 8 *Linsang pardicolor*, *Gray.*
 „ „ *Urva cancrivora*, *Hodgs.*
 „ 9 *Paguma* (*Paradoxurus*) *Grayii*.
 „ „ *Paguma?* (*Paradoxurus*) *laniger*, *Gray.*
 „ 10 *Paradoxurus Bondar*, *Gray.*
 „ 12 *Vulpes montanus*, *Pearson.*
 „ 12 *Martes?* *Toufaus*, *Hodgs.*
 „ 13 *Mustela Canigula*, *Hodgs.*
 „ „ *Cathia*, *Hodgs.*
 „ „ *Helictis Nipaleusis*, *Hodgs.*
 „ 15 *Ursus Isabellinus*, *Horsf.*
 „ 16 *Talpa Micrura*, *Hodgs.*
 „ „ *Sorex Nemorivagus*, *Hodgs.*
 „ 17 *Mus Bandicota*, *Bechst.*
 „ „ *Muridæ*; all the species of this family.
 „ 19 *Nesokia Kok*, *Gray.*
 „ „ *Hydrophila*, *Hodgs.*
 „ 22 *Lepus Oemodius*, *Hodgs.*
 „ „ *Lagomys Nipalensis*, *Hodgs.*
 „ 23 *Artomys Bobac*, *Gmel.*
 „ 24 „ *Tibetanus*, *Hodgs.*
 „ „ *Rhizomys badius*, *Hodgs.*
 „ 26 *Kemas Hodgsoni*, *Gray*, the *Chiru.*
 „ „ *Tetracerus quadricornis*, *Gray.*
 „ 31 *Moschus chrysogaster*, *Hodgs.*

Of the Ruminant genera, *Cervus*, Antelope, &c. such species as are not found in the lower regions,

(True Copies.)

G. A. BUSHBY,

Secretary to the Government of India.

With regard to the appropriation and distribution of specimens of Natural History in all Departments, which may be collected during the Mission to Thibet, reference will doubtless be made to the instructions on this subject in the Court's Public despatch No. 17 of 1840, to the Government of India, dated 16th September.

Meteorological and Zoological phenomena will necessarily engage the attention of the Mission.

East India House, November, 1847.

From G. A. Bushby, Esq. Secretary to Government, forwarding the directions of the Governor General in Council for the immediate return of the Report and drawings of the cave Temples of Kalinjar and Shapur, south of Chunar.

The Secretary stated that on receipt of Mr. Bushby's despatch, a representation was forthwith made by the President to the Governor General, as Patron of the Society, showing that the MS. and drawings were actually in the artist's and printer's hands, and soliciting permission to retain these till completed for publication, which request was graciously acceded to by His Lordship.

From C. W. Montriou, Esq. in charge of Observatory, Colaba, forwarding, by order of the Government of Bombay, a copy of the Magnetical and Meteorological observations made at Colaba in 1845.

From G. A. Bushby, Esq. forwarding a copy of the 7th volume of the Madras Astronomical observations.

From Dr. Hooker, Honorary Member of the Asiatic Society, describing a brilliant Aurora observed by him at Barroon, east bank of the Soane, on the evening of the 14th of February, 1848.

Barroon East bank Soane River,
February 14th, 9 P. M. Bar. 29.924.

Temp. air, 62; Wet Bulb, 51.5; Grass 53. Calm, clear, horizon; sky blue-grey; moon and stars clear; milky-way and zodiacal lights invisible.

Moon's light by Photom. 3.07 inch, (sun at 3 P. M. 4.17 inch by same.) Observed a well defined auroral arch, 12° broad, its upper limb well defined alt. 20°. Extremes bearing West 20 South, and North 50 East, light pale but clear and bright. Lower limb resting on an arch as dark as the sky at zenith. Beams very numerous and crowded; principal ones about 30, all linear and lance-shaped, crossing the zenith and meridian and converging on opposite horizon towards South 15 East; all the beams, bright, clear, well

defined, pale yellow, moving slowly, forked at their apices, or split from their apices towards the zenith, almost obscuring stars of the first magnitude. Longest beams terminate at South 10 East; alt. 25° . Middle beam broad crossing the zenith, and descending to North 50 East, at alt. 40° . Northerly beams almost parallel to horizon, terminate at South 70 East: alt. 20° .

10 P. M. General appearance more diffused, upper limb of arch less clearly defined. No beams cross the zenith, two detached ones bear South 15 East at 15° alt. a beam occasionally re-appears at zenith.

10.15. Appearances to West of North as before. One beam on zenith; two cross the Meridian, one to South 30 East at 15° alt. which is not continuous towards the arch in South East. Arch more diffused, forming a mass of pale light from Horizon to alt. 25° . Beams broader, shifting and splitting more frequently; soon after a dark horizontal band 4° broad crosses the arch, extending North 55 West, to North 10 West to upper limb, alt. 12° ; it appears as a break in the auroral arch; whole Horizon covered with a pale diffused light, strongest below arch, and in opposite quarter of heavens beams still clear, the lateral broadest and best defined. The dark band becoming broader, and breaking at the arch.

10.30. Beams from arch still clear, linear, 2° — 6° broad, about 12 in number, none reach the zenith:—a few lateral ones cross the moon's Meridian, the upper approach within 8° of her orb, and still are well defined; North East beams and most crowded North West broadest and most clearly defined. The dark band becomes broader, and divides the auroral arch. Whole phenomena fading, the longest, brightest and most numerous beams extend along the North East horizon.

10.50. Still fading, beams and arch all disappearing to West of North, 18 narrow beams between North and North 20 East from broken remains of arch—cold southerly breeze springs up.

10.55. Breaking up fast.

11 P. M. Diffused light over all horizon, scattered fragments of beams in various parts of heaven, like cirrus, linear and best defined along and parallel to North and North East horizon.

Mid-night. Two faint beams to North-East and two strongly defined lance-shaped ones parallel to each other, to South-West.

The following day was bright, clear and warm.

From Capt. Jas. Abbott, forwarding an account, by an eye-witness, of the terrible Cataclysm of the Indus. (Published in the present number of the Journal.)

From Major Madden, Almorah, with reference to his promised essay on the Flora of Kumaon.

From the Rev. Mr. Keane, requesting information as to the site of Interjalie, and giving a brief account of the late earthquake as experienced at Chapra, Kishnagur.

From Mr. Mansel, regarding the Taj model in the Museum, for which Mr. Mansel proposed a glass case to be provided. Ordered accordingly—and the thanks of the Society voted to Mr. M. for his liberality in restoring the Taj model without charge.

From Baboo Pearymohun Sen, apologising on the part of the Cameron Testimonial Committee for their having called a meeting at the Society's House without having asked permission.

From Capt. J. D. Cunningham, transmitting an account of the ruins at Putharee, near Oudehpoor. (Ordered for publication.)

From Col. Low, Penang, relative to the inscriptions of supposed Hindu origin at Penang and in Sumatra. (Published in present number of the Journal.)

From the Hon. Col. Butterworth, to Mr. Laidlay, promising to send the fragments of the Singapore inscription to the Museum of the Asiatic Society.

On the analysis of a coal from the Punjab, by Dr. Andrew Fleming, communicated by Mr. Laidlay. Mr. Elliot stated that Dr. Fleming had been appointed by Government to make a survey of the district from which this coal was obtained, and he suggested that the publication of Dr. Fleming's paper be postponed till the receipt of his further report.

From a member of the Asiatic Society, forwarding four copies for the Library, of a Sanscrit Tract, entitled "Sri Yesu Khrista Mähátmyam."

From Mr. C. Govindrow, Khandeish, Dhoolia, inquiring as to the possibility of obtaining copies, printed or MS. of several volumes of the Mackenzie MSS. The Librarian having been referred to, reports that there are 32 folio vols. of the MS., the whole of which may be copied for about 1000 Rs.

From the Prince Gholam Mahomed, announcing the proposed publication of a memoir by himself, in English and Persian, of the life of Hyder Ali Shah. Price of Persian copy 12 Rs.; English translation 6 Rs. The letter having been referred to the Oriental Section and favorably reported on, it was stated by Mr. Elliot, that since that re-

port was drawn up, it had become doubtful whether the work was not a mere reprint of one containing invectives against the British Government which the Society might not wish to approve of; the subject was accordingly again referred to the Oriental Section.

Read a report from the Oriental Section, as follows :

To W. B. O'Shaughnessy, M. D. Senior Secretary, Asiatic Society.

Sir,—I am directed by the Oriental Section to acknowledge the receipt of your letter of the 21st, and in reply to convey to you, for the information of the Council, the suggestions of the Section concerning the subjects about which their opinion has been asked by the Council.

2. The Section recommend, that of such works of Moolavee Abdullah as are not in the Library of the Society and as are of real value, one copy should be taken in exchange for publications of the Society. The Section will forward to the Council as soon as practicable a list of those works that deserve a place in the Library.

3. The Section think the work of Prince Gholam worthy of the patronage of the Society, but would first request Prince Gholam to mention his price, before they can propose the number of copies to be subscribed for by the Society.

4. With regard to the publication of the life of Timur by the Society, the Section beg to suggest that Major Anderson be solicited to favour the Society with a report on the contents and merits of the work, to be circulated, together with the entire MS. through the Section. As there exists already a translation, although abridged, of this work by P. de la Croix, the Section are not able to pass an opinion about the expediency of its publication before the MS. is laid before them.

5. The Section recommend, for the approval of the Council, to publish as the second work in the Oriental Journal, the Brihadáranyaka Upanishad, with the commentary of Sankara Achárya, and the gloss of Anandagiri. His Upanishad is not yet published, and is one of the most important and extensive. At the same time the edition of this Upanishad would accord with the wish of Professor Wilson, forming, as it does, a considerable portion of the Sata Patha Bráhmaṇa, the publication of which he suggested to the Society.

I have the honour to be,

Sir,

Your most Obedient Servant,

E. ROER.

Secretary, Oriental Section, Asiatic Society.

Asiatic Society, the 29th Feb. 1848.

Resolved, that the Report be adopted and its suggestions carried into effect, with the exception of the part referring to the history of Hyder Ali, reserved for further consideration.

Read a note from Dr. Falconer, regarding a collection of shells presented to the Society by Mr. Cuming in 1843, and for which no return had been made. At Dr. Falconer's desire the consideration of this letter was remitted to the Council and the Section of Natural History.

From Licut. Grant, Adjt. 27th Regt. N. I. announcing the arrival of a sculptured stone sent by Capt. Davidson, on the part of Dr. Spilsbury, for the Museum of the Society.

From F. Edward Hall, Esq. regarding Tarkiras of the Persian, Hindi and Urdu poets, to which he is desirous of directing the attention of the Society. Referred for Report to the Oriental Section.

The Secretary stated that the proposition made and seconded at the last meeting for the election of Professor Henry of Princeton University as an Honorary member of the Society having been considered by the Council, he was directed to report it had been approved of and recommended to the adoption of the Society.

Dr. Falconer objected to the election as irregular, on the ground that no detailed statement of Professor Henry's claims for this honor had been submitted to the Society, and he proposed that the election be postponed.

Dr. Walker supported Dr. Falconer's proposition.

The Secretary stated that Professor Henry was proposed for election exactly in the same manner as all Honorary members had been elected for eight years past. He had been proposed and seconded at one meeting; the proposition referred to the Council, who had directed the Secretary to communicate their approval of it to the Society, as was now done; no detailed statement of claims and scientific services had ever been given or sought in previous instances. Dr. Henry's discoveries and contributions to our knowledge of Electricity, Magnetism, and Meteorology, were familiar to every one, and he hoped that the meeting would not delay the election lest their doing so might be deemed a slight to one of the most amiable and eminent philosophers of the day.

The proposition for Dr. Henry's election having been put to the vote Dr. Henry was elected by a show of hands and by a large majority an Honorary Member of the Asiatic Society.

A note was read from Mr. Piddington, apologizing for his absence on account of illness.

The Curator of the Zoological Department read a descriptive list of additions to the Museum during the past month.

LIBRARY.

The following books have been received since the last meeting.

Presented.

Zakarija Ben Muhammed Ben Mahmud el Cazwini's *Kosmographie*, Edited by Ferdinand von Wüstenfeld. Erste Hälfte.—BY THE EDITOR.

Jahresbericht der Deutschen morgenlandischen Gesellschaft für 1846.—BY THE EDITOR.

Meteorological Register kept at the Surveyor General's office Calcutta, for the month of January 1848.—BY THE DEPUTY SURVEYOR GENERAL.

The Oriental Baptist, No. 14.—BY THE EDITOR.

The Upadeshak, No. 14.—BY THE EDITOR.

The Calcutta Christian Observer for February 1848.—BY THE EDITORS.

Proceedings of the Academy of Natural Sciences of Philadelphia for May and June 1847.—BY THE ACADEMY.

Nityadharmánuranjicá, Nos. 51, 52.—BY THE EDITOR.

Tatwabodhiní Patricá, No. 55.—BY THE TATWABODHINI SABHA.

Proceedings of the Royal Astronomical Society, Vol. VII. Nos. 1—7.—BY THE SOCIETY.

Bulletin de la Societe de Geographie, Tome VII.—BY THE SOCIETY.

Quarterly Journal of the Geological Society, No. 12.—BY THE SOCIETY.

Memoirs of the Royal Astronomical Society, Vol. XVI.—BY THE SOCIETY.

Astronomical Observations made at the Hon'ble East India Company's Observatory at Madras, 1843—44.—BY THE GOVERNMENT OF INDIA.

The Pilgrimage of Fa Hian, pp. 1—24.—BY THE TRANSLATOR.

Bombay Magnetical and Meteorological observations made at the Observatory at Bombay, from April to December 1845.—BY THE GOVERNMENT OF BOMBAY.

Zeitschrift der Deutschen Morganlandischen Gesellschaft—Herausgegeben von den Geschäftsführern. Heft III. and IV.—BY THE EDITOR.

Exchanged.

The Athenæum, Nos. 1047—1051 to 53.

Journal of the Agri-Horticultural Society of India, Vol. VI. Part II.

The London, Edinburgh and Dublin Philosophical Magazine, Nos. 210-11.

Purchased.

The Annals and Magazine of Natural History, Nos. 135—36.

Journal des Savants, Oct. 1847.

Comptes Rendus des Seances de l'Academie des Sciences, Tome XXV. Nos. 17—21.

Donation to the Museum of Antiquities.

A Nepalese Sword.—By SAMUEL WRIGHT, Esq.

Certified to be a true Report,

JAMES W. COLVILLE, *President*.

W. B. O'SHAUGHNESSY, *Secretary*.

*Report of Curator Zoological Department.**

The following are the presentations I have to record this evening :—

1. Sir W. Jardine, Bt. A small collection of British mammalia and birds, comprising a very fine example of the rare British Wild Cat (*Felis catus*, L., as currently assigned, v. *F. sylvestris*, Aldrovand), procured in Inverness-shire ; —also two Alpine Hares,—specimens of *Arvicola glareola*, (Schreb., v. *riparia*, Yarrell, &c.),—a fine cock Pheasant,—some Black and Red Grouse,—and sundry small birds. On comparison of the Cat with the imperfect skin from Afghanistan noticed in XIV, 342, XV, 169, the latter differs in having shorter fur, of a more fulvescent hue, especially on the under-parts and limbs, with the markings more broken into spots, though still tending to form irregular obliquely transverse stripes ; the tail, also, if perfect, would seem to be tapering (as in the domestic Cat), and has its black tip less developed. The two are, however, very closely allied, and both may have, at least partly, contributed to the origin of the domestic Cats of their respective regions. The fine Scottish specimen before the Meeting, recalls vividly to mind the figure and expression of a large European male Cat, as distinguished from the more slimly formed domestic animal of this country, which (as I have been informed on good authority) occasionally interbreeds with the common wild *F. chaus*. Mr. Walter Elliot, again, informs me that he has known the wild *F. rubiginosa* of the Coromandel coast to interbreed with the domestic

* Presented at the February meeting.

Cat; and that a brood of semi-wild hybrids thus produced occasioned him at one time much inconvenience. In connexion with these facts, we cannot but observe the remarkable coincidence of the defective tail of the wild Malayan *F. planiceps*, and of the domestic Cats of the same countries (vide XV, 245).*

* It is probable that this variation likewise occurs in the very nearly allied, but considerably larger, *F. Temminckii* of the Malayan peninsula, &c.; from which it does not appear that *F. moormensis* of Nepal and Sikim differs in any respect. I have examined specimens of both, the former from Malacca, the latter from Sikim, but have never had the opportunity of actually comparing them together.

On the subject of *Canine* hybrids, there is an interesting paper, as recording some *observed facts*, in the 'Calcutta Sporting Review' for December 1847; but the writer makes a great mistake in supposing that the rufous 'Wild Dog' (so called) of India and the Malay countries—*C. rutilus*, v. *Cuon primævus*, &c. &c.—has contributed largely to the origin of domestic Dogs, as not a single variety of the latter is known to want the second true molar in the lower jaw, as in the wild species referred to; and he falls into a still greater error in supposing that the *Hyæna* could interbreed with any *Canine*, its generative organs being on a different type, and the mode of copulation consequently not exhibiting the peculiarity observable in *Canis*. The dentition, too, is widely dissimilar; and other important diversities might be enumerated. The affinity of *Hyæna* is with the *Viverridæ*, and not with the *Canidæ*.

Some experiments which I have been trying with the hybrid race produced by the male *Gallus Sonneratii* and picked common hens, have hitherto led to opposite results to what have followed the intermixture of different Canines. The male hybrid was particularly salacious; yet though a great number of eggs have been produced by hens trodden by him, of the pure domestic fowl, as well as of his own hybrid race, not a single one has hatched, while other eggs placed with them produced chickens. I am now keeping the only remaining hybrid hen with a Burmese domestic cock, but very little removed from the wild *bankivus*; and she has already produced some more eggs. In the London Zoological Gardens, some ten years ago, was a brood of $\frac{3}{4}$ bred birds between the English Pheasant and common Fowl, these being $\frac{1}{4}$ Pheasant: and if this be possible, surely two different species of true *Gallus* ought to produce fertile hybrids, at least with either parent race, if not *per se et inter se*. While on the subject of hybrids, I may here notice that my friend, C. S. Bonnevie, Esq. of Rungpore, some time ago presented me with a living specimen bred between the male Guinea-fowl and common hen, which is now preserved in the Society's Museum. Two other hybrids thus produced have since been described in the 'Proceedings of the Academy of Natural Sciences of Philadelphia' for Sept. 29, 1846, p. 101. The Society's bird is almost wholly white, but a few coloured feathers it has show no trace of the Guinea-fowl spots, observable in those described by Dr. Morton: the bill and feet of the specimen, however, and its voice and carriage when alive, partook very much of the Guinea-fowl: it has no trace of comb, nor of the Guinea-fowl bony knob, and but very slight wattles depending from the angle of the gape. The most curious bird hybrid I have seen was one bred in the Garden of the Zoological Society, between the *Chenalopex aegyptiacus* and that singular variety of domestic Duck common at Manilla, which is known as the "Penguin Duck."

2. The Rev. F. Mason, Maulmain. Two packages, by successive arrivals of the steamer, containing a number of flat skins of birds. Among them is the *Crypsirina varians* (v. *Phrcnotrix temia*, Horsfield), which would seem to be of common occurrence in the Tenasserim provinces, where its presence was first remarked by the late Dr. Helfer. Also a new species of Shrike, which our taxidermists have fortunately been able to set up, and which may be thus described:—

Lanius hypoleucos, nobis. Very closely allied to *L. Hardwickii*, Vigors; from which it differs—1, in having the entire crown nigrescent, passing gradually from the black of the forehead to dark ashy on the nape; the ear-coverts being uniformly coloured with the feathers superiorly adjacent:—2, in having the rump and upper tail-coverts of the same deep maroon colour as the back and scapularies:—3, in the much greater development of the ferruginous margins of the great wing-coverts and tertiaries:—and 4, in having the underparts uniformly white, a little subdued, and tinged with a very faint blush, but having no trace of rufous on the flanks and elsewhere.

3. R. Templeton, Esq. M. D., Colombo, through W. Elliot, Esq. Madras. Two living Monkeys, viz. a young male of *Macacus sinicus*, Desm. (v. *pilcatus*, Lesson), and a young female of *Presbytis cephalopterus*, (Zimm.), of the normal colouring. Pl.—represents three varieties of colour of the last named species, with a figure of the allied *Pr. Johnii* of the Nilgherries, in the distance.*

4. Walter Elliot, Esq. Madras. A living specimen of a Cat, for inspection; and a stuffed Dolphin procured in the Bay of Bengal. The former is of the species described by Mr. Elliot, as the *Wagati* of the Mahrattas of the Ghâts, in the 'Madras Journal of Literature and Science,' X, 103, and since termed *Leopardus Ellioti* by Mr. Gray, who identifies it with *Felis nipalensis*, Hodgson. Of this, which I regard as *F. bengalensis*, Pennant, the Society's museum contains a fine series; and I consider Mr. Elliot's animal to be decidedly of the same

* The *Pr. thersites*, described in my Report for last November (XVI, 1271), inhabits the low country of the northern half of Ceylon, and is therefore probably distinct from the very large Monkey, of a dark colour, which Major Forbes remarked "at Newerra Elia, and scattered over the colder parts of the island." The adult male of *Pr. thersites* sent by Dr. Templeton was savage or rather uncertain in its temper for some time after its arrival; but to myself and others he knows, he is now quite gentle and extremely fond of being caressed. This has enabled me to examine him more particularly; and I find that he has not the radiating centre of hair above the brows, observable in the other *Entelloid* Indian Monkeys, while the hair of the crown is particularly dense and *touffu*, though without rising into a crest. His coat generally is dense and somewhat peculiar; very unlike that of *Pr. entellus*, but approaching that of *Pr. anchises* of the central table-land of the peninsula. Fig. 3 of Pl.—, with outstretched legs, represents a very characteristic attitude of *Pr. cephalopterus*; and fig. 1 exhibits the normal colouring of the species.

species, and its spots (of a somewhat bolder pattern than occurs in the generality of the species from the sub-Himalayan region, Assam, Sylhet, and Arracan,) are more filled out with black than I remember to have seen before: but I can detect no further difference. It would be of some interest to obtain this species (or its representative) in the Tenasserim provinces; in order to observe whether it graded into *F. javanensis* of the Malayan peninsula, which is considered the same by M. Temminck who unites them under the name *F. minuta*, in which he is followed by Dr. Schlegel and others.

The Dolphin, which Mr. Elliot inclines to regard as a new species, and terms *Delphinus perniger*, approaches very closely in size and proportions to *D. hastatus*, F. Cuv., *Hist. des Cétacés*, p. 161, and to which this author refers the *Grampus Heavisidii* of Gray; but there is no trace of the peculiar markings of the under-parts which distinguish the Cape species referred to. Mr. Elliot, describing the fresh animal (as I presume), mentions it to be "uniform shining black above, blackish beneath. It has a series of 26 teeth on each side, above and below; conical, obtuse, and slightly curved inwards." The animal is well stuffed; and now measures 5 ft. 4 in. in total length (to middle of tail), the beak (to frontal elevation) 4 in.; dorsal fin situate posteriorly to the middle of the body, commencing at a distance of $29\frac{1}{2}$ in. from the tip of the beak; length of its upper margin (in the dry specimen) $10\frac{1}{4}$ in., and height about 6 in.; length of the flipper 10 in., and extreme breadth 4 in.; spread of the tail-flukes $14\frac{1}{2}$ in., and these are divided apart to a depth of $1\frac{1}{4}$ in.; beyond this division, a very distinct ridge or keel is continued for about 1 ft., attaining a maximum elevation of about $\frac{5}{8}$ in. These are about all the specific distinctions that can be drawn from the dry specimen.

5. Capt. Scholefield, of the Schooner "Sydney." A dead female *Ursus malayanus*, from Java. Perfectly identical, as a species, with specimens from Assam, Tenasserim, &c.; but the individual remarkable for two great black patches occupying much of the right side of its U-like mark on the chest, and for numerous small spots spread over the remainder of the same mark. It has been set up as a stuffed specimen.

6. From the Barrackpore menagerie. A very fine dead specimen of *Phasianus torquatus*, mas.

7. Mr. Geoffrey Finch. A living albino of the common larger Mongoose of Bengal (*Mangusta grisea*).*

8. L. Manley, Esq. A dead African Finch, in perfect plumage, the *Crithagra chrysopogon*, Swainson, v. *Fringilla butyracea*, var., Latham. Though in the ordinary full plumage of the male bird, this specimen proved, upon examination, to be a female.

* Since dead, and mounted in the Museum.

9. Mr. J. H. Howell, of the Pilot Service. Some fine specimens of water-snakes, and a few fishes, procured at the Sandheads.

10. Mr. J. T. Babanau. Two fetuses of the wild Sow.

11. Mr. E. Lindstedt. A collection of several species of Snakes, from Malacca.

12. Baboo Rajendro Mullick. Two specimens of *Strix flammea*, and a dead white Guinea-fowl: the latter, however common in Europe, is held in some estimation by the native gentlemen who keep collections of living animals.

13. Mr. C. Bell, of the Preventive Service. A dead King Parrot (*Aprosmictus scapulatus*).

14. Mr. W. E. Templeton, Assistant in the Museum. A specimen of the American *Gallinula (?) martinica*, (L.)

15. R. W. G. Frith, Esq. A dead English common hen, with large spurs; also the skin of a very interesting species of *Rhinolophine* Bat, which I can only classify as a new generic form, by the name

Calops, nobis. General character of *Rhinolophus* and *Hipposideros*, but the tail and *calcanea* wanting, and the inter-crural membrane acutely emarginated to the depth of an even line with the knees." Ears delicate, large, broad, and rounded; continued round to the front, without a trace of emargination separating an *anti-helix*. Facial pit surmounted by a small field, divided by a raised medial line, and above this projects a small crest of membrane, having an abruptly rising, obtusely bifid tip, which is bent forward: behind this membrane, a minute pencil of hairs indicates the position of the sac observable in *Hipposideros*: each nostril is surrounded by a slight fringe of membrane; and a broader fringe borders the facial cavity in front, impending the upper lip; but the sides of the facial cavity are densely fringed with hair only; and the fur is long and dense upon the forehead. The teeth cannot be examined without sacrificing the unique specimen. The proportions of the wings, and the development of the ante-brachial membrane, are the same as in *Nycteris*. The fur is long, and delicately fine, as in true *Rhinolophus*.

C. Frithii, nobis. Length, from nose to rump, about $1\frac{7}{8}$ in.; of the middle of the inter-crural membrane but $\frac{1}{4}$ in.; head $\frac{3}{4}$ in.; ears posteriorly $\frac{1}{2}$ in., or somewhat less; fore-arm $1\frac{3}{4}$ in.; shank $\frac{1}{16}$ in.; foot with claws $\frac{3}{8}$ in.; longest finger $2\frac{1}{2}$ in. Colour dusky or blackish, the fur tipped with dull ashy-brown above, and with paler and somewhat albescent ashy below: the membranes fuscous. Inhabits the Soonderbuns of Lower Bengal.

It is somewhat remarkable that I have not yet succeeded in obtaining a single fresh specimen of a *Rhinolophus* or *Hipposideros* in Lower Bengal; and the only additional Indian species I know of, to those enumerated in XIII, 480 *et seq.*, is a *Hipposideros* thus described to me by Dr. Templeton of Ceylon, together with a notice of a species according very well with *H. spcoris*.

Hipposideros ater, Templeton. "Resembles the other" (*speoris*?) "in every thing but size and colour. The back is coal-black, the hair near the body dark silvery-grey; belly greyish-black; the membrane deep black: tail one-half longer than the femora, its tip exserted. Length $1\frac{3}{4}$ to $1\frac{9}{10}$ in.; expanse 10 to $10\frac{3}{4}$ in.; tail 7 to 8 in. Common in old buildings about Colombo."

Among the gatherings of the past month, may be noticed particularly two remarkably fine specimens, male and female, of half-grown Orang-utans, picked up (when but just dead) after having been thrown away into the streets. These have been stuffed, and now replace the specimens of corresponding age, but not nearly in such fine condition, that we possessed previously.

Also a new wading bird, of the genus *Macrorhamphus*, a skin of which Mr. Jerdon sent me, upon loan, to describe some time ago, but of which I had not hitherto published the memorandum I took of it. The following is from the fresh specimen obtained in the Calcutta bazar, and Mr. Jerdon has only procured one individual.

M. semipalmatus, Jerdon. Larger than *M. griseus*, with the three anterior toes connected at base by membranes, of which the inner is equally developed with that connecting the middle and outer toes of *Himantopus candidus* and *H. leucocephalus*, the outer being rather more so. Bill exactly as in *Scelopax*; its terminal fifth smooth and tumid in the living bird, becoming shrunken and papillose soon after death. Length 13 in., of which the bill to forehead measures $2\frac{7}{8}$ in.; expanse of wings 21 in.; closed wing $6\frac{1}{2}$ in.; tail $2\frac{1}{2}$ in.; tarse $1\frac{3}{4}$ in.; middle toe and nail $1\frac{1}{2}$ in.; hind-toe and nail $\frac{9}{16}$ in. Bill dusky, dull carneous towards the base of the lower mandible; legs and toes lead-coloured. Winter plumage ashy-brown above, with whitish-grey margins to the feathers; crown and lores dusky, the feathers but slightly margined paler; and divided apart by a whitish supercilium: throat, neck, and breast, somewhat indistinctly pencilled with a zigzag subterminal dusky marking on each feather, on a dull white ground; increasing to three or four dusky bars on those of the flanks and on the lower tail-coverts: belly and vent white: rump and upper tail-coverts white, banded with dusky-black: tail-feathers also banded with dusky-black, the dark bars being broader than the white ground: in the uropygials, or middle pair of tail-feathers, the white disappears on the inner web, and is reduced to a series of spots on the outer; the primaries and their coverts, and the winglet, are dusky; the shorter primaries, to a partial extent, and the secondaries and their coverts, being edged with white: the first primary a little exceeds the second in length, and has the usual stout and conspicuously white stem: under-surface of the wing chiefly white, except along its anterior borders.

This bird is probably a sea-side species, like its chiefly American congener; which would account for its being so rarely brought to the Calcutta bazar, among

the heaps of small waders that appear there daily for more than half the year. In like manner *Numenius phaeopus*, and *Streptilas interpres*, are very rarely brought, and I have never yet obtained there the common *Haematopus* of the shores of the Bay, nor *Calidris arenaria* (which has at least once been procured by Mr. Jerdon). Three other species that I have respectively obtained only once, are *Vanellus* (?) *leucurus*, *Tringa canutus* (which has once likewise been procured by Mr. Jerdon), and *Phalaropus lobatus*. The last was obtained on the 11th May, 1846; it was exceedingly emaciated, and had not commenced changing colour. The Woodcock I have obtained here twice, and have heard of other instances of its occurrence. During the present cold season, I have procured for the first time *Podiceps cristatus*, L., which I am informed is not rare in the Soonderbuns:* and I have once only procured the beautiful *Anas formosa*, Gm., (v. *glocitans*, &c., nec *bimaculata*). The Mallard (*Anas boschas*) never, nor has it been met with in the peninsula of India, though occurring up the country. The same holds with *Vanellus cristatus*, and one or two other species. In the peninsula of India, Mr. Jerdon has once only procured the Australian *Hiaticula nigrifrons*, which he has described by the name *Charadrius russatus*.† Another Grallatorial bird discovered by Mr. Jerdon, which I may

* The excessively rude fowling-pieces used by the bazar shikarrees are little calculated for hitting such wary and rapid divers as the Crested Grebe.

† Among the land-birds, one or two stragglers, chiefly from the hills, have severally been here met with once: such are *Gecinus striolatus*, nobis, *G. chloropus*, Vieillot, *Cypselus micropus*, nobis, *Tephrodornis grisola*, nobis (a Malayan species), *Monticola cinclorhyncha*, (Vig.), and *Calliope cyana*, (Hodgson). Other chiefly hill species on two or three occasions only; as *Chrysocolaptes sultaneus*, (Hodg.), *Accipiter fringillarius*, *Acc. virgatus* (v. *besra*), *Falco peregrinator*, *F. severus*, *F. subbuteo*, and *Tinnunculus vespertinus*; *Oriolus cochinchinensis*; *Treron nipalensis*, *Tr. chlorogaster* (the S. Indian representative of the common *Tr. phanicopterus* of N. India, now and then met with, as is likewise the white-bellied *Amadina malacca*, similarly representing in S. India the *A. sinensis* of Bengal, &c.); *Brachyurus tristegus* (Sparrman, the *Pitta brachyura* apud Gould,) occasionally; and there are species of the *Phylloscopus* group which I have hitherto procured only once, as *Abrornis cantator*, (Tickell, v. *Abr. schisticeps*, Hodgson, apud G. R. Gray, nec apud nos, XIV, 592), *Phylloscopus indicus*, (Jerdon, v. *Ph. griseolus*, nobis, XVI, 443, as now identified by that gentleman), *Ph. javanicus*, (Horsf., v. *magnirostris*, nobis), and *Ph. nitidus* nobis, twice. And there are several species of birds which I have never yet obtained on the alluvium of the river, but which abound immediately this is quitted, and thence are distributed southward even to Ceylon. Vide my note on this subject, XVI, 117. Also certain mammalia, as *Sciurus tristriatus*, and sundry *Muridæ*.

Since the above was written, I have likewise obtained in Calcutta a fresh specimen of *Caprimulgus macrourus* (verus), Horsfield, common in Arracan, Tenasserim, Malacca, Java, and thence to the norther coast of Australia. In Bengal and northern India gener-

take this opportunity to describe, is of a form nearly allied to *Cursorius*, from which it differs chiefly in having a much more robust and shorter bill, and in the first primary being rather shorter than the second and third. The eye, also, would appear to be very much larger and more Plover-like—at least in the Indian species; but a second representative certainly exists in the *Cursorius chalcopterus*, Tem., of Africa, the eye of which is however represented as being small in the coloured figure published by Messrs. Mitchell and G. R. Gray.

Macrotarsius bitorquatus, Jerdon. Length $9\frac{1}{2}$ or 10 in., of wing $6\frac{3}{4}$ in., and tail 3 in.; bill to forehead $\frac{3}{4}$ in., and very nearly $\frac{1}{4}$ in. in least vertical depth, about the middle; tarse $2\frac{1}{2}$ in.; middle toe and nail $\frac{7}{8}$ in. Colour sandy-brown above, with a faint pink gloss; the dorsal feathers slightly margined with rusty-brown, and the wing-coverts more conspicuously with pale rufescent: crown of the head black, with rusty lateral margins to the feathers; a broad white supercilium, commencing with the lores, is continued round the occiput; and there is a less defined (but equally conspicuous) rufescent-white streak along the mesial line of the head; ear-coverts streaked dusky and ferruginous: throat white, with a broad rufous band below it; this is bordered by a narrow white semi-collar, continued to below the ear-coverts, and narrowly edged above and below with dusky; then follows a broad brown gorget, and finally another white collar, margined above and below with dusky; this again is succeeded by brown, forming an ill-defined band on the lower part of the breast; and the rest of the lower-parts are isabelline, with white upper and lower tail-coverts; primaries and their coverts black, the first two primaries largely and obliquely marked with white, which is reduced to a large subterminal spot on the inner web of the third primary, and a small analogous spot on the fourth: tail white at base, extending for two-thirds of the length of the exterior web of its outermost feather; the terminal half of the tail black, passing basally into brown, and all but the middle feathers having a small white spot at the extremity of their inner webs. Terminal half of the bill corneous and black, the basal half pale (probably yellow in the fresh bird), and the legs also pale. Inhabits the eastern Ghâts of the peninsula of India.

A natatorial bird that may be redescribed with advantage, is the African representative of the common “Brahminee Goose,” or “Ruddy Sheldrake” of authors, (*Casarca rutila*), of India.

Casarca cana, (Gm.) This bird is correctly described by Sonnerat as *l'Oie Sauvage à tête grise de la côte de Coromandel*: being thus mistaken for *C. rutila* of Asia, from which it is very obviously distinct, however closely allied. The male (judging the sex from analogy with that of *C. rutila*) has the head and ally, this species is replaced by the nearly allied *C. albonotatus*, Tickell: and in S. India and Ceylon by the equally allied *C. mahrattensis*, Sykes.

neck of a drab-brown colour; the lower part of the neck encircled by a ferruginous collar (in place of the black one of the male *C. rutila* when in full plumage); the neck below the collar, and the whole breast, are pale isabelline, abruptly contrasting with the ferruginous of the back and under-parts, which on the back is of a much deeper hue than in *C. rutila*; the abdominal patch is deep ferruginous—approaching to maronne—in both species, but the under tail-coverts are paler in *C. cana*, and the black on either side of them at base of *C. rutila*, is in *C. cana* replaced by dusky minutely freckled with whitish; this freckling is also seen on the inner scapularies and inter-scapularies of *C. cana*, and the tertiaries have their outer webs of a deep maronne colour—the wings being otherwise alike in the two species. Size and proportions also the same. The specimen of *C. cana* described was referred to *C. rutila* in VII, 581; and Mr. G. R. Gray, in his ‘Illustrated Genera of Birds,’ suggests the name as a synonyme of his *Bernicla inornata*, (King),—a very doubtful *Bernicla*, by the way, and which seems rather to pertain to the *Chenalopex*, *Casarca*, and *Tadorna* group; while Mr. Gould’s *B. jubata*, (Lath.), is as evidently allied to *Nettapus*. The present description will, I trust, establish *Casarca cana* as an undoubted species.

E. BLYTH.

